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AllenNVMeTest3-30-19.txt

Intel Core i7-5557U testing with a Intel NUC5i7RYB (RYBDWi35.86A.0375.2018.1114.1652 BIOS) and Intel Iris 6100 on Ubuntu 18.04 via the Phoronix Test Suite.

Test Systems:

Samsung SSD 970 EVO 1TB

Processor: Intel Core i7-5557U @ 3.40GHz (2 Cores / 4 Threads), Motherboard: Intel NUC5i7RYB (RYBDWi35.86A.0375.2018.1114.1652 BIOS), Chipset: Intel Broadwell-U-OPI, Memory: 16384MB, Disk: 1000GB Samsung SSD 970 EVO 1TB, Graphics: Intel Iris 6100 (1100MHz), Audio: Intel Broadwell-U Audio, Monitor: SB220Q, Network: Intel I218-V + Intel 7265

OS: Ubuntu 18.04, Kernel: 4.15.0-46-generic (x86_64), Desktop: GNOME Shell 3.28.3, Display Server: X Server 1.19.6, Display Driver: modesetting 1.19.6, OpenGL: 4.5 Mesa 18.2.8, Compiler: GCC 7.3.0, 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++ --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
Disk Notes: NONE / data=ordered,errors=remount-ro,relatime,rw
Processor Notes: Scaling Governor: intel_pstate powersave
Security Notes: KPTI + __user pointer sanitization + Full generic retpoline IBPB IBRS_FW + SSB disabled via prctl and seccomp + PTE Inversion; VMX: conditional cache flushes SMT vulnerable

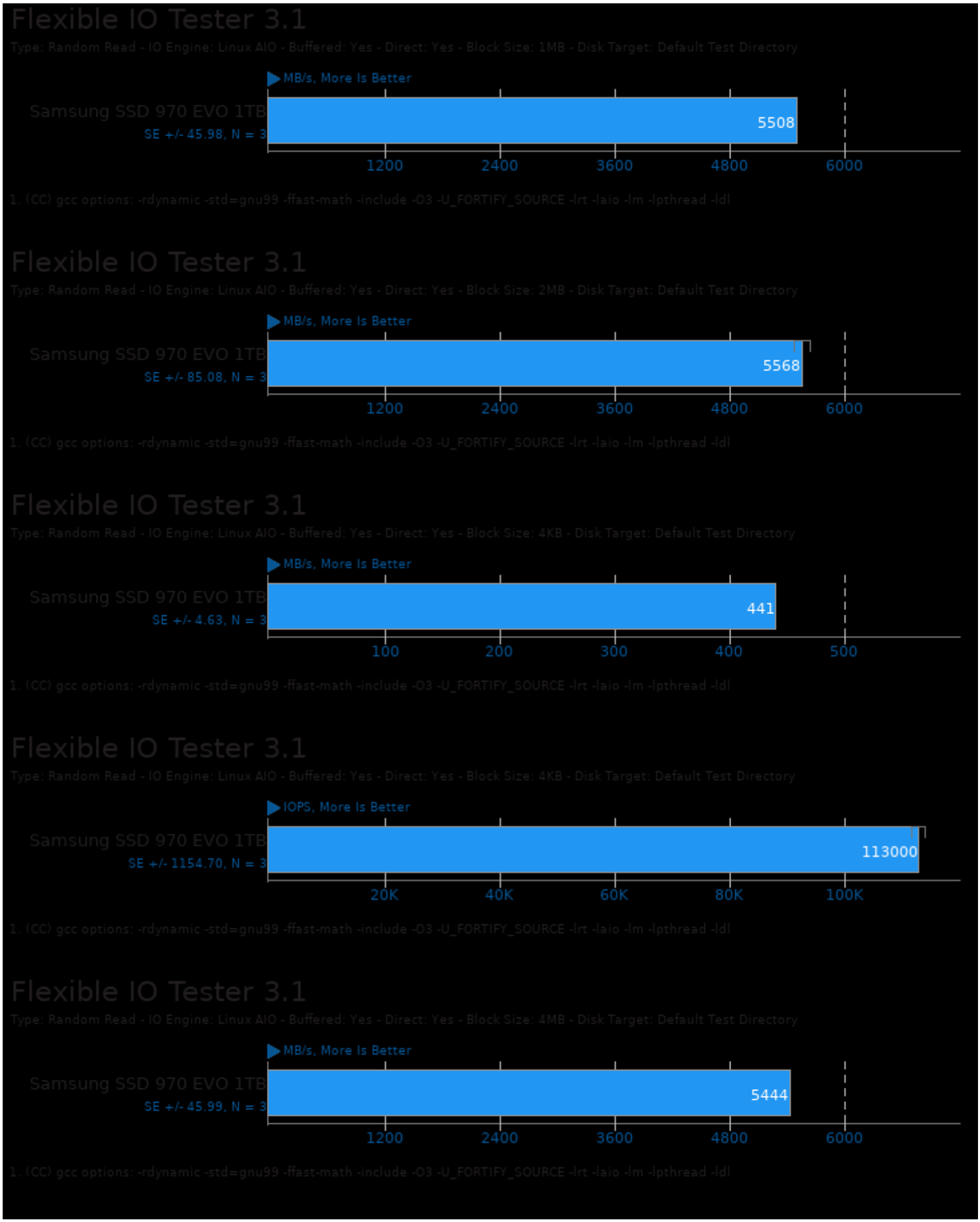
	Samsung SSD 970 EVO 1TB
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 1MB (MB/s)	5508
Standard Deviation	1.4%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 2MB (MB/s)	5568
Standard Deviation	2.6%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 4KB (MB/s)	441
Standard Deviation	1.8%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 4KB (IOPS)	113000
Standard Deviation	1.8%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 4MB (MB/s)	5444
Standard Deviation	1.5%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 8KB (MB/s)	2191
Standard Deviation	0.4%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 8KB (IOPS)	280333
Standard Deviation	0.5%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 8MB (MB/s)	5523
Standard Deviation	1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 16KB	4164
Standard Deviation	1.5%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 16KB	266667
Standard Deviation	1.6%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 16MB	5557
Standard Deviation	0.8%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 32KB	4607
Standard Deviation	1.6%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 32KB	147667
Standard Deviation	1.7%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 32MB	5627
Standard Deviation	1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 64KB	4741
Standard Deviation	1.2%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 64KB	75867
Standard Deviation	1.2%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 64MB	5712
Standard Deviation	0.5%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 128KB	5034
Standard Deviation	1.1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 128KB	40267
Standard Deviation	1.1%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 128MB	5718
Standard Deviation	2%
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 256KB	4955
Standard Deviation	1%

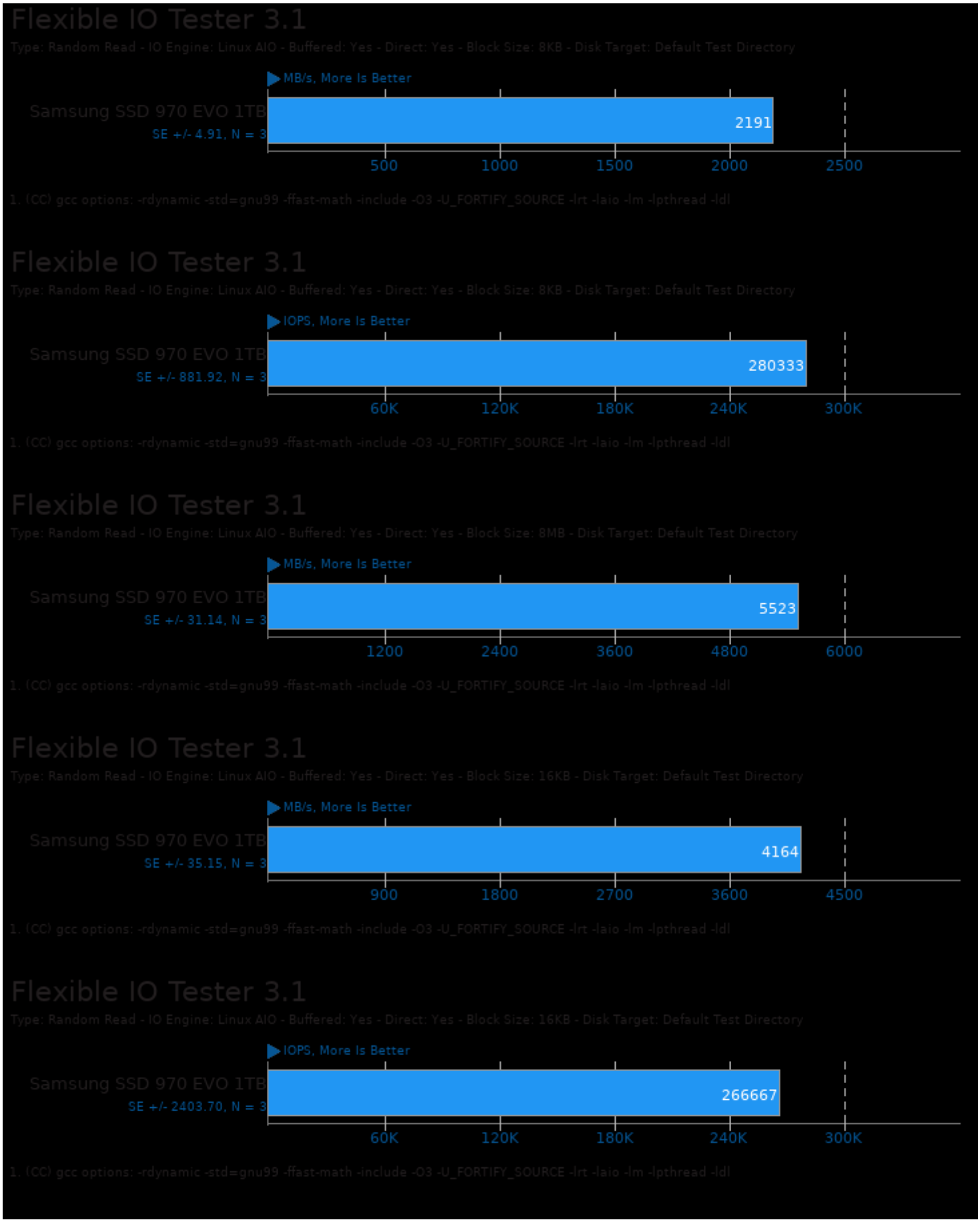
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 256KB 19800

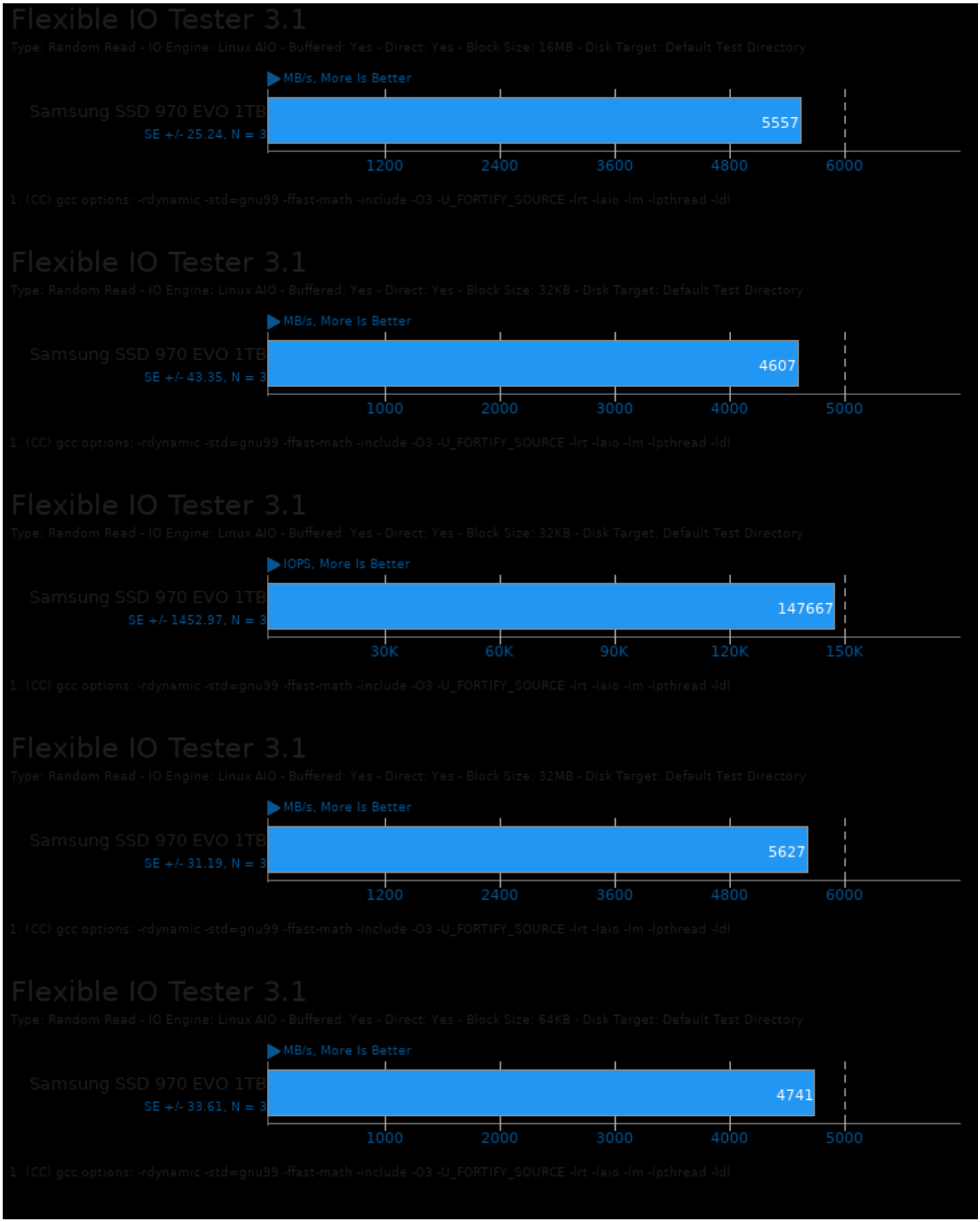
Standard Deviation 1%

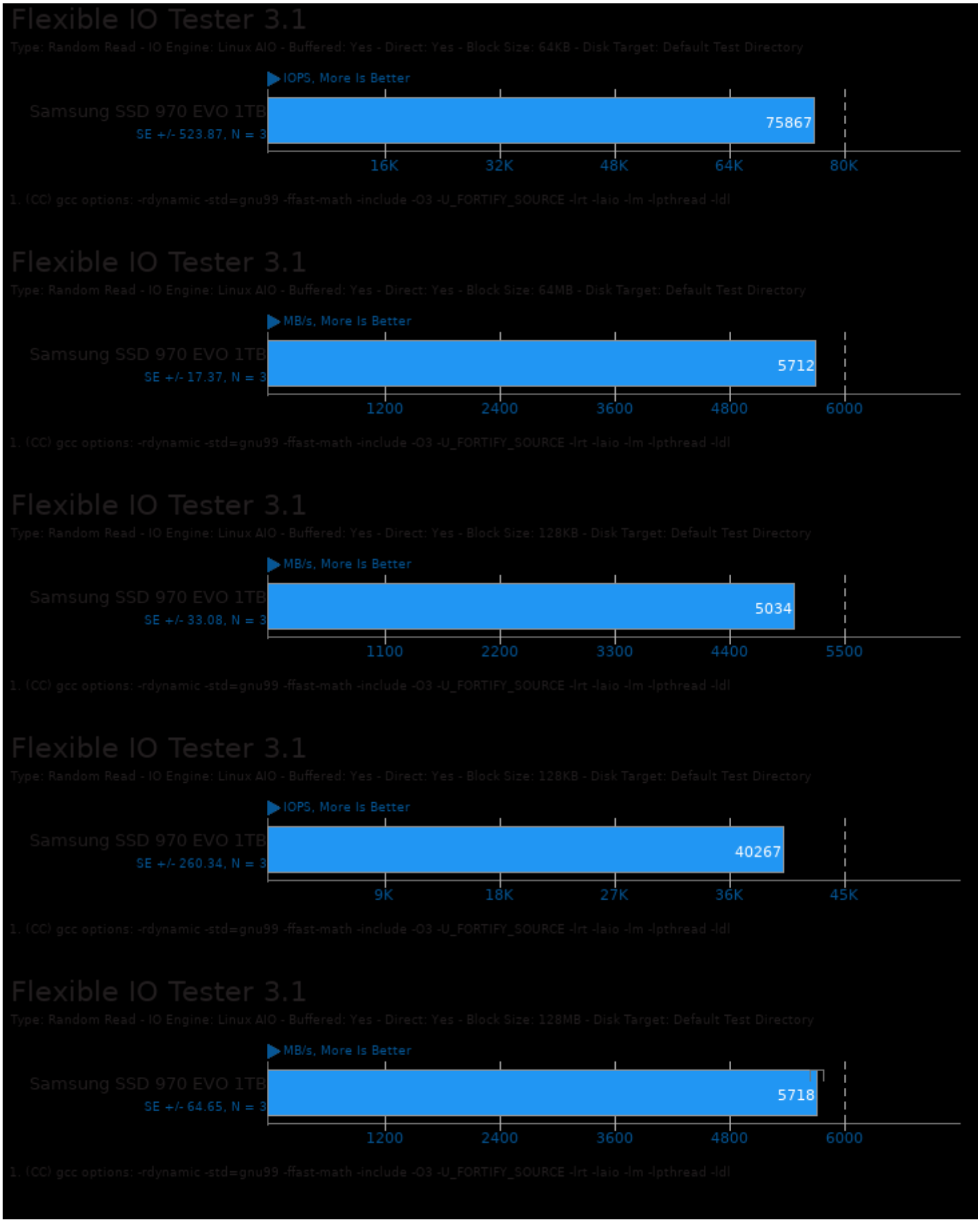
Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 512KB 4922

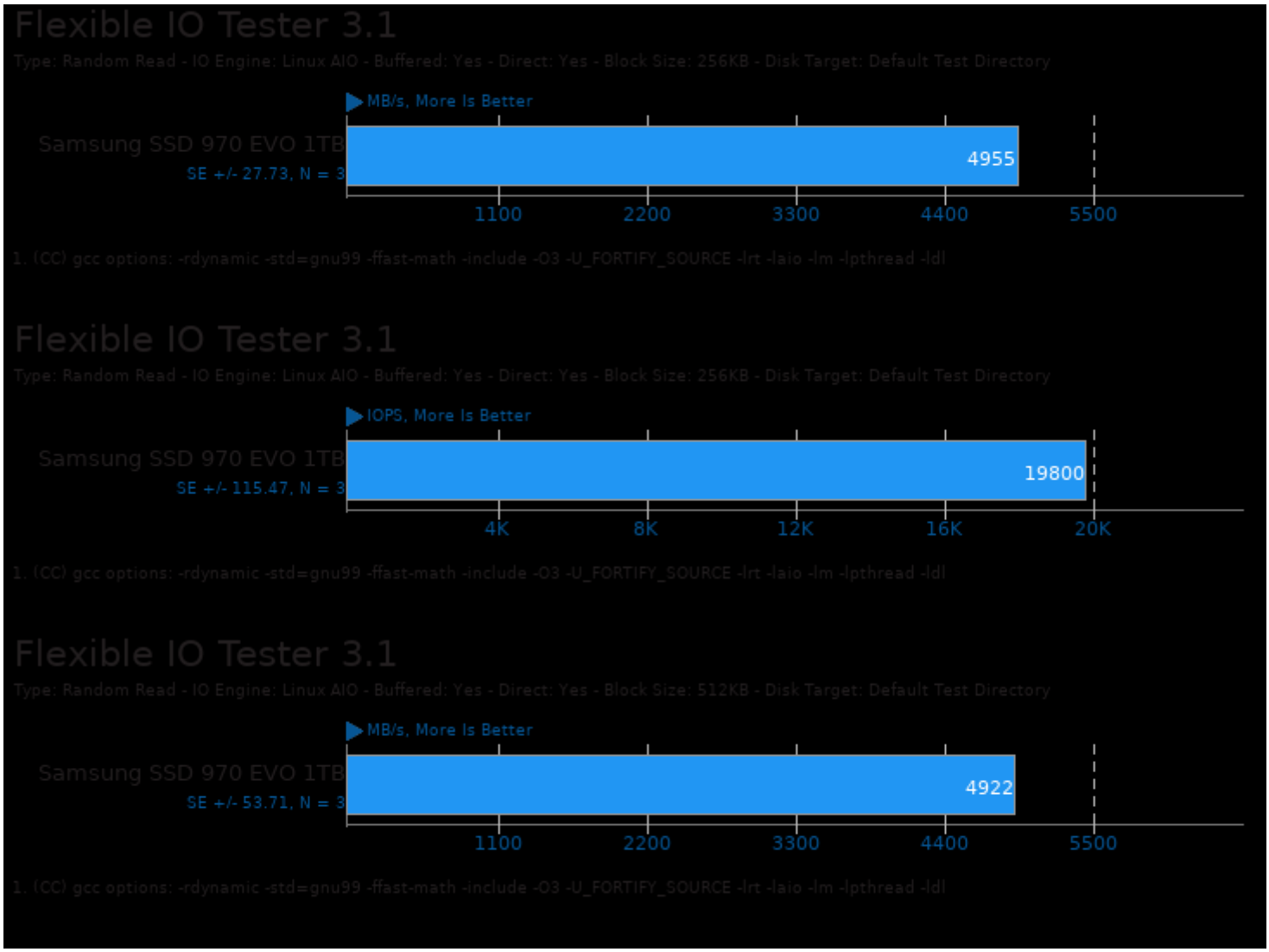
Standard Deviation 1.9%


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 1MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 45.98, N = 3
5508
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 2MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 85.08, N = 3
5568
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 4.63, N = 3
441
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 1154.70, N = 3
113000
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 45.99, N = 3
5444
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 8KB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 4.91, N = 3
2191
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 8KB - Disk Target: Default Test Directory
IOPS, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 881.92, N = 3
280333
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 31.14, N = 3
5523
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 35.15, N = 3
4164
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 2403.70, N = 3
266667
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 25.24, N = 3
5557
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 32KB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 43.35, N = 3
4607
1000
2000
3000
4000
5000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 32KB - Disk Target: Default Test Directory
IOPS, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 1452.97, N = 3
147667
30K
60K
90K
120K
150K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 32MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 31.19, N = 3
5627
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 64KB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 33.61, N = 3
4741
1000
2000
3000
4000
5000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 64KB - Disk Target: Default Test Directory
IOPS, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 523.87, N = 3
75867
16K
32K
48K
64K
80K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 64MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 17.37, N = 3
5712
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 128KB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 33.08, N = 3
5034
1100
2200
3300
4400
5500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 128KB - Disk Target: Default Test Directory
IOPS, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 260.34, N = 3
40267
9K
18K
27K
36K
45K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 128MB - Disk Target: Default Test Directory
MB/s, More Is Better
Samsung SSD 970 EVO 1TB
SE +/- 64.65, N = 3
5718
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lm -lpthread -ldl



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