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# HD+Crypto

ARMv7 rev 3 testing with a ODROID-XU4 Hardkernel Odroid XU4 and llvmpipe 2048MB on Ubuntu 16.04 via the Phoronix Test Suite.

## Test Systems:

### MSI GS43VR

Processor: Intel Core i7-7700HQ @ 3.80GHz (4 Cores / 8 Threads), Motherboard: MSI MS-14A3 (E14A3IMS.30B BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 16384MB, Disk: 1000GB ADATA SSD DP910 + 256GB THNSN5256GPUK TOSHIBA, Graphics: MSI NVIDIA GeForce GTX 1060 6144MB (1404/4006MHz), Audio: Realtek ALC898, Monitor: LG ULTRAWIDE, Network: Qualcomm Atheros Killer E2500 Gigabit + Qualcomm Atheros QCA6174 802.11ac Wireless

OS: Ubuntu 18.04, Kernel: 4.15.0-39-generic (x86_64), Desktop: Xfce 4.12, Display Server: X Server 1.19.6, Display Driver: NVIDIA 390.77, OpenGL: 4.6.0, Compiler: GCC 7.3.0, File-System: ext4, Screen Resolution: 3440x1440

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,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

## Odroid XU4 SanDisk A2

Processor: ARMv7 rev 3 @ 1.50GHz (8 Cores), Motherboard: ODROID-XU4 Hardkernel Odroid XU4, Memory: 2048MB, Disk: 32GB Wireless Stick + 64GB SR64G, Graphics: llvmpipe 2048MB, Monitor: IPS224

OS: Ubuntu 16.04, Kernel: 4.14.73-136 (armv7l), Desktop: MATE 1.12.1, Display Server: X Server 1.18.4, OpenGL: 3.3 Mesa 18.0.5 (LLVM 6.0 128 bits), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: usbhid.quirks=0x0eef:0x0005:0x0004
Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Disk Notes: CFQ / acl,barrier,block_validity,delalloc,errors=remount-ro,noatime,rw,stripe=32732,user_xattr
Processor Notes: Scaling Governor: cpufreq-dt performance

## Odroid XU4 SanDisk

Processor: ARMv7 rev 3 @ 1.50GHz (8 Cores), Motherboard: ODROID-XU4 Hardkernel Odroid XU4, Memory: 2048MB, Disk: 32GB Wireless Stick + 16GB SL16G, Graphics: llvmpipe 2048MB, Monitor: IPS224

OS: Ubuntu 16.04, Kernel: 4.14.73-136 (armv7l), Desktop: MATE 1.12.1, Display Server: X Server 1.18.4, OpenGL: 3.3 Mesa 18.0.5 (LLVM 6.0 128 bits), Compiler: GCC 5.4.0 20160609, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: usbhid.quirks=0x0eef:0x0005:0x0004
Compiler Notes: --build=arm-linux-gnueabihf --disable-browser-plugin --disable-libitm --disable-libquadmath --disable-sjlj-exceptions --disable-werror --enable-checking=release --enable-clocale=gnu --enable-gnu-unique-object --enable-gtk-cairo --enable-java-awt=gtk --enable-java-home --enable-languages=c,ada,c++,java,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-multilib --enable-nls --enable-objc-gc --enable-plugin --enable-shared --enable-threads=posix --host=arm-linux-gnueabihf --target=arm-linux-gnueabihf --with-arch-directory=arm --with-arch=armv7-a --with-default-libstdcxx-abi=new --with-float=hard --with-fpu=vfpv3-d16 --with-mode=thumb -v
Disk Notes: CFQ / acl,barrier,block_validity,delalloc,errors=remount-ro,noatime,rw,stripe=32732,user_xattr
Processor Notes: Scaling Governor: cpufreq-dt performance

| | MSI GS43VR | Odroid XU4 SanDisk A2 | Odroid XU4 SanDisk |
|---|---|---|---|
| **AIO-Stress - Rand Write (MB/s)** | **3079** | 10.36 | **9.54** |
| **Normalized** | 100% | 0.34% | 0.31% |
| **Standard Deviation** | 1.5% | 1.1% | 27.5% |
| **Flexible IO Tester - Rand Read - Sync - No - No - 4KB (MB/s)** | **36.80** | **7.46** | 8.38 |
| **Normalized** | 100% | 20.27% | 22.77% |
| **Standard Deviation** | 0.3% | 0.4% | 0.2% |
| **Flexible IO Tester - Rand Read - Sync - No - No - 8MB (MB/s)** | **1417** | **80.40** | 80.57 |
| **Normalized** | 100% | 5.67% | 5.69% |
| **Standard Deviation** | 0.3% | 0% | 0.3% |

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|---|---|---|---|
| **Flexible IO Tester - Rand Read - Sync - No - No - 16KB (MB/s)** | **97.67** | **22.47** | 23.77 |
| **Normalized** | 100% | 23.01% | 24.34% |
| **Standard Deviation** | 0.3% | 0.3% | 2.8% |
| **Flexible IO Tester - Rand Read - Sync - No - Yes - 4KB (MB/s)** | **36.47** | **7.44** | 8.47 |
| **Normalized** | 100% | 20.4% | 23.22% |
| **Standard Deviation** | 1.1% | 0.1% | 0.6% |
| **Flexible IO Tester - Rand Read - Sync - No - Yes - 8MB (MB/s)** | **1419** | **80.23** | 80.30 |
| **Normalized** | 100% | 5.65% | 5.66% |
| **Standard Deviation** | | 0.4% | 0% |
| **Flexible IO Tester - Rand Read - Sync - Yes - No - 4KB (MB/s)** | **35.53** | **7.36** | 8.18 |
| **Normalized** | 100% | 20.71% | 23.02% |
| **Standard Deviation** | 0.2% | 0.1% | 0.6% |
| **Flexible IO Tester - Rand Read - Sync - Yes - No - 8MB (MB/s)** | **6313** | 492 | **428** |
| **Normalized** | 100% | 7.79% | 6.78% |
| **Standard Deviation** | 0.2% | 14.9% | 18.1% |
| **Flexible IO Tester - Rand Write - Sync - No - No - 4KB (MB/s)** | **192** | **2.23** | 2.33 |
| **Normalized** | 100% | 1.16% | 1.21% |
| **Standard Deviation** | 4.8% | 30.5% | 9.8% |
| **Flexible IO Tester - Rand Write - Sync - No - No - 4KB (IOPS)** | 48950 | | |
| **Standard Deviation** | 5.1% | | |
| **Flexible IO Tester - Rand Write - Sync - No - No - 8MB (MB/s)** | **681** | 56.67 | **11.19** |
| **Normalized** | 100% | 8.32% | 1.64% |
| **Standard Deviation** | 4.3% | 1% | 20.3% |
| **Flexible IO Tester - Rand Read - Sync - No - No - 256KB (MB/s)** | **780** | 63.27 | **54.50** |
| **Normalized** | 100% | 8.11% | 6.99% |
| **Standard Deviation** | 0.3% | 2% | 0.9% |
| **Flexible IO Tester - Rand Read - Sync - No - Yes - 16KB (MB/s)** | **114** | 21.30 | **20.13** |
| **Normalized** | 100% | 18.68% | 17.66% |
| **Standard Deviation** | | 0% | 0.3% |
| **Flexible IO Tester - Rand Read - Sync - Yes - No - 16KB (MB/s)** | **4606** | 20.90 | **19.53** |
| **Normalized** | 100% | 0.45% | 0.42% |
| **Standard Deviation** | 0.2% | 0% | 0.8% |
| **Flexible IO Tester - Rand Read - Sync - Yes - No - 16KB (IOPS)** | 294667 | | |
| **Standard Deviation** | 0.2% | | |
| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 4KB (MB/s)** | **40.40** | **7.04** | 7.46 |
| **Normalized** | 100% | 17.43% | 18.47% |
| **Standard Deviation** | 0.2% | 0.2% | 0.8% |

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| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 4KB (IOPS)** | 10333 | | |
| **Standard Deviation** | 0.6% | | |
| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 8MB (MB/s)** | **6324** | 489 | **295** |
| **Normalized** | 100% | 7.73% | 4.66% |
| **Standard Deviation** | 0.4% | 2.3% | 0.9% |
| **Flexible IO Tester - Rand Write - Sync - No - No - 16KB (MB/s)** | **396** | 8.16 | **4.86** |
| **Normalized** | 100% | 2.06% | 1.23% |
| **Standard Deviation** | 4.9% | 14.5% | 25.7% |
| **Flexible IO Tester - Rand Write - Sync - No - No - 16KB (IOPS)** | 25333 | | |
| **Standard Deviation** | 4.8% | | |
| **Flexible IO Tester - Rand Write - Sync - No - Yes - 4KB (MB/s)** | **199** | 2.29 | **2.26** |
| **Normalized** | 100% | 1.15% | 1.14% |
| **Standard Deviation** | 2.8% | 19.7% | 13% |
| **Flexible IO Tester - Rand Write - Sync - No - Yes - 4KB (IOPS)** | 50933 | | |
| **Standard Deviation** | 2.6% | | |
| **Flexible IO Tester - Rand Write - Sync - No - Yes - 8MB (MB/s)** | **683** | 56.90 | **10.13** |
| **Normalized** | 100% | 8.33% | 1.48% |
| **Standard Deviation** | 1.9% | 0.2% | 20.6% |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 4KB (MB/s)** | **2408** | 4.96 | **4.56** |
| **Normalized** | 100% | 0.21% | 0.19% |
| **Standard Deviation** | 3% | 22.2% | 18.8% |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 4KB (IOPS)** | 616333 | | |
| **Standard Deviation** | 3% | | |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 8MB (MB/s)** | **3869** | 54.40 | **9.96** |
| **Normalized** | 100% | 1.41% | 0.26% |
| **Standard Deviation** | 0.2% | 3.3% | 15% |
| **Flexible IO Tester - Rand Read - Sync - No - Yes - 256KB (MB/s)** | **802** | 63.60 | **43.07** |
| **Normalized** | 100% | 7.93% | 5.37% |
| **Standard Deviation** | 0.4% | 0.9% | 0.3% |
| **Flexible IO Tester - Rand Read - Sync - Yes - No - 256KB (MB/s)** | **8724** | 400 | **42.57** |
| **Normalized** | 100% | 4.59% | 0.49% |
| **Standard Deviation** | 0.2% | 3.1% | 2.4% |
| **Flexible IO Tester - Rand Read - Sync - Yes - No - 256KB (IOPS)** | 34567 | | |
| **Standard Deviation** | 1.4% | | |
| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 16KB (MB/s)** | **4723** | 20.30 | **17.90** |
| **Normalized** | 100% | 0.43% | 0.38% |
| **Standard Deviation** | 0.5% | 0% | 1.1% |

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| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 16KB (IOPS)** | 302333 | | |
| **Standard Deviation** | 0.5% | | |
| **Flexible IO Tester - Rand Write - Sync - No - No - 256KB (MB/s)** | **612** | 32.43 | **8.73** |
| **Normalized** | 100% | 5.3% | 1.43% |
| **Standard Deviation** | 4.7% | 2.3% | 21.9% |
| **Flexible IO Tester - Rand Write - Sync - No - Yes - 16KB (MB/s)** | **402** | 8.39 | **4.70** |
| **Normalized** | 100% | 2.09% | 1.17% |
| **Standard Deviation** | 1.2% | 3.4% | 25.5% |
| **Flexible IO Tester - Rand Write - Sync - No - Yes - 16KB (IOPS)** | 25733 | | |
| **Standard Deviation** | 1.2% | | |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 16KB (MB/s)** | **3957** | 12.57 | **7.68** |
| **Normalized** | 100% | 0.32% | 0.19% |
| **Standard Deviation** | 3.4% | 26.1% | 34.1% |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 16KB (IOPS)** | 253167 | | |
| **Standard Deviation** | 3.3% | | |
| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 4KB (MB/s)** | **2457** | **4.61** | 5.06 |
| **Normalized** | 100% | 0.19% | 0.21% |
| **Standard Deviation** | 0.5% | 20.2% | 14.2% |
| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 4KB (IOPS)** | 629000 | | |
| **Standard Deviation** | 0.4% | | |
| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 8MB (MB/s)** | **3787** | 49.63 | **9.39** |
| **Normalized** | 100% | 1.31% | 0.25% |
| **Standard Deviation** | 5.7% | 27.6% | 17.5% |
| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 256KB (MB/s)** | **8768** | 401 | **41.80** |
| **Normalized** | 100% | 4.57% | 0.48% |
| **Standard Deviation** | 0.2% | 1.2% | 0.6% |
| **Flexible IO Tester - Rand Read - Sync - Yes - Yes - 256KB (IOPS)** | 34733 | | |
| **Standard Deviation** | 1.8% | | |
| **Flexible IO Tester - Rand Write - Sync - No - Yes - 256KB (MB/s)** | **631** | 32.63 | **8.93** |
| **Normalized** | 100% | 5.17% | 1.42% |
| **Standard Deviation** | 1.5% | 2.8% | 1.5% |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 256KB (MB/s)** | **5282** | 39.13 | **7.47** |
| **Normalized** | 100% | 0.74% | 0.14% |
| **Standard Deviation** | 3.4% | 2.8% | 3.4% |
| **Flexible IO Tester - Rand Write - Sync - Yes - No - 256KB (IOPS)** | 21129 | | |
| **Standard Deviation** | 3.3% | | |

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| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 16KB (MB/s)** | **4085** | 13.25 | **6.72** |
| **Normalized** | 100% | 0.32% | 0.16% |
| **Standard Deviation** | 0.8% | 20.4% | 35.9% |
| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 16KB (IOPS)** | 261333 | | |
| **Standard Deviation** | 0.8% | | |
| **Flexible IO Tester - Seq Read - Sync - No - No - 4KB (MB/s)** | **68.53** | **6.04** | 9.73 |
| **Normalized** | 100% | 8.81% | 14.2% |
| **Standard Deviation** | 0.1% | 0.2% | 6.3% |
| **Flexible IO Tester - Seq Read - Sync - No - No - 4KB (IOPS)** | 17533 | | |
| **Standard Deviation** | 0.3% | | |
| **Flexible IO Tester - Seq Read - Sync - No - No - 8MB (MB/s)** | **1525** | **46.40** | 55.50 |
| **Normalized** | 100% | 3.04% | 3.64% |
| **Standard Deviation** | 0.2% | 0% | 0.8% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - No - 4KB (MB/s)** | **839** | **7.09** | 9.52 |
| **Normalized** | 100% | 0.85% | 1.13% |
| **Standard Deviation** | | 0% | 0.1% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - No - 4KB (IOPS)** | 215000 | | |
| **Flexible IO Tester - Rand Read - Linux AIO - No - No - 8MB (MB/s)** | **1708** | **63.57** | 71.70 |
| **Normalized** | 100% | 3.72% | 4.2% |
| **Standard Deviation** | 0% | 0.2% | 0.1% |
| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 256KB (MB/s)** | **5302** | 39.73 | **9.08** |
| **Normalized** | 100% | 0.75% | 0.17% |
| **Standard Deviation** | 2.6% | 3.4% | 10.2% |
| **Flexible IO Tester - Rand Write - Sync - Yes - Yes - 256KB (IOPS)** | 21233 | | |
| **Standard Deviation** | 2.6% | | |
| **Flexible IO Tester - Seq Read - Sync - No - No - 16KB (MB/s)** | **147** | **19.03** | 24.67 |
| **Normalized** | 100% | 12.95% | 16.78% |
| **Standard Deviation** | | 0.6% | 0.5% |
| **Flexible IO Tester - Seq Read - Sync - No - Yes - 4KB (MB/s)** | **65.30** | **6.15** | 9.89 |
| **Normalized** | 100% | 9.42% | 15.15% |
| **Standard Deviation** | 0.5% | 0.6% | 0.5% |
| **Flexible IO Tester - Seq Read - Sync - No - Yes - 4KB (IOPS)** | 16733 | | |
| **Standard Deviation** | 0.3% | | |
| **Flexible IO Tester - Seq Read - Sync - No - Yes - 8MB (MB/s)** | **1494** | 72.57 | **59.40** |
| **Normalized** | 100% | 4.86% | 3.98% |
| **Standard Deviation** | 0.1% | 0.3% | 0.3% |

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| **Flexible IO Tester - Seq Read - Sync - Yes - No - 4KB (MB/s)** | **4328** | 198 | **162** |
| **Normalized** | 100% | 4.57% | 3.74% |
| **Standard Deviation** | 0.1% | 3.5% | 2.9% |
| **Flexible IO Tester - Seq Read - Sync - Yes - No - 4KB (IOPS)** | **1108000** | 50800 | **41400** |
| **Normalized** | 100% | 4.58% | 3.74% |
| **Standard Deviation** | 0.2% | 3.6% | 2.9% |
| **Flexible IO Tester - Seq Read - Sync - Yes - No - 8MB (MB/s)** | **6331** | 429 | **300** |
| **Normalized** | 100% | 6.78% | 4.74% |
| **Standard Deviation** | 0% | 0.6% | 0.7% |
| **Flexible IO Tester - Seq Write - Sync - No - No - 4KB (MB/s)** | **215** | **1.90** | 4.58 |
| **Normalized** | 100% | 0.88% | 2.13% |
| **Standard Deviation** | 1.2% | 0.5% | 11.8% |
| **Flexible IO Tester - Seq Write - Sync - No - No - 4KB (IOPS)** | 54600 | | |
| **Standard Deviation** | 1.5% | | |
| **Flexible IO Tester - Seq Write - Sync - No - No - 8MB (MB/s)** | **715** | 59.33 | **12.49** |
| **Normalized** | 100% | 8.3% | 1.75% |
| **Standard Deviation** | 4.9% | 0.4% | 4.3% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - No - 16KB (MB/s)** | **996** | 28.63 | **25.10** |
| **Normalized** | 100% | 2.87% | 2.52% |
| **Standard Deviation** | 0.1% | 1.9% | 0% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - No - 16KB (IOPS)** | 63733 | | |
| **Standard Deviation** | 0.1% | | |
| **Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 4KB (MB/s)** | **828** | 9.74 | **9.64** |
| **Normalized** | 100% | 1.18% | 1.16% |
| **Standard Deviation** | 0.1% | 0.2% | 0.4% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 4KB (IOPS)** | 212000 | | |
| **Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 8MB (MB/s)** | **1672** | 100 | **82.73** |
| **Normalized** | 100% | 5.98% | 4.95% |
| **Standard Deviation** | | | 0.3% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 4KB (MB/s)** | **37.80** | 7.73 | **7.30** |
| **Normalized** | 100% | 20.45% | 19.31% |
| **Standard Deviation** | 0.3% | 1.3% | 0.5% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 8MB (MB/s)** | **5611** | 123 | **97.97** |
| **Normalized** | 100% | 2.19% | 1.75% |
| **Standard Deviation** | 0.2% | | 1.5% |
| **Flexible IO Tester - Rand Write - Linux AIO - No - No - 4KB (MB/s)** | **472** | 2.38 | **2.37** |
| **Normalized** | 100% | 0.5% | 0.5% |
| **Standard Deviation** | 2.4% | 24.1% | 11.5% |

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| **Flexible IO Tester - Rand Write - Linux AIO - No - No - 4KB (IOPS)** | 121000 | | |
| **Flexible IO Tester - Rand Write - Linux AIO - No - No - 8MB (MB/s)** | **665** | 71.03 | **21.36** |
| **Normalized** | 100% | 10.68% | 3.21% |
| **Standard Deviation** | 4.6% | 3.3% | 3.4% |
| **Flexible IO Tester - Seq Read - Sync - No - No - 256KB (MB/s)** | **833** | 64.47 | **58.03** |
| **Normalized** | 100% | 7.74% | 6.97% |
| **Standard Deviation** | 0.1% | 0.1% | 1.6% |
| **Flexible IO Tester - Seq Read - Sync - No - Yes - 16KB (MB/s)** | **147** | **21.10** | 24.40 |
| **Normalized** | 100% | 14.35% | 16.6% |
| **Standard Deviation** | 1.2% | 1.6% | 0.8% |
| **Flexible IO Tester - Seq Read - Sync - Yes - No - 16KB (MB/s)** | **7139** | 419 | **302** |
| **Normalized** | 100% | 5.87% | 4.23% |
| **Standard Deviation** | 0.5% | 2.2% | 1% |
| **Flexible IO Tester - Seq Read - Sync - Yes - No - 16KB (IOPS)** | **457000** | 26833 | **19300** |
| **Normalized** | 100% | 5.87% | 4.22% |
| **Standard Deviation** | 0.4% | 2.2% | 1% |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 4KB (MB/s)** | **4306** | 240 | **189** |
| **Normalized** | 100% | 5.57% | 4.39% |
| **Standard Deviation** | 1% | 0.2% | |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 4KB (IOPS)** | **1102333** | 61333 | **48300** |
| **Normalized** | 100% | 5.56% | 4.38% |
| **Standard Deviation** | 1% | 0.2% | 0.5% |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 8MB (MB/s)** | **6344** | 558 | **392** |
| **Normalized** | 100% | 8.8% | 6.18% |
| **Standard Deviation** | 0.2% | 1.1% | 2.5% |
| **Flexible IO Tester - Seq Write - Sync - No - No - 16KB (MB/s)** | **489** | **6.98** | 7.35 |
| **Normalized** | 100% | 1.43% | 1.5% |
| **Standard Deviation** | 3.3% | 0.2% | 15.9% |
| **Flexible IO Tester - Seq Write - Sync - No - No - 16KB (IOPS)** | 31267 | | |
| **Standard Deviation** | 3.3% | | |
| **Flexible IO Tester - Seq Write - Sync - No - Yes - 4KB (MB/s)** | **216** | **1.91** | 4.64 |
| **Normalized** | 100% | 0.88% | 2.15% |
| **Standard Deviation** | 1.2% | 0.6% | 13.3% |
| **Flexible IO Tester - Seq Write - Sync - No - Yes - 4KB (IOPS)** | 55167 | | |
| **Standard Deviation** | 1.2% | | |
| **Flexible IO Tester - Seq Write - Sync - No - Yes - 8MB (MB/s)** | **715** | 58.73 | **11.38** |
| **Normalized** | 100% | 8.21% | 1.59% |
| **Standard Deviation** | 4.4% | 2.4% | 5.4% |

| | | | |
|---|---|---|---|
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 4KB (MB/s)** | **3343** | 54.90 | **11.70** |
| **Normalized** | 100% | 1.64% | 0.35% |
| **Standard Deviation** | 8.9% | 0.7% | 0.9% |
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 4KB (IOPS)** | **855917** | **14067** | |
| **Normalized** | 100% | 1.64% | |
| **Standard Deviation** | 8.9% | 1.1% | |
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 8MB (MB/s)** | **3795** | 53.83 | **11.60** |
| **Normalized** | 100% | 1.42% | 0.31% |
| **Standard Deviation** | 6.5% | 6% | 2.3% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - No - 256KB (MB/s)** | **1592** | 75.87 | **63.90** |
| **Normalized** | 100% | 4.77% | 4.01% |
| **Standard Deviation** | | 1% | 0.8% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 16KB (MB/s)** | **966** | 26.67 | **24.17** |
| **Normalized** | 100% | 2.76% | 2.5% |
| **Standard Deviation** | 0.1% | 0.4% | 0.2% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 16KB (IOPS)** | 61800 | | |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 16KB (MB/s)** | **4022** | 21.23 | **19.53** |
| **Normalized** | 100% | 0.53% | 0.49% |
| **Standard Deviation** | 0.3% | 0.3% | 0.6% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 16KB (IOPS)** | 257667 | | |
| **Standard Deviation** | 0.2% | | |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 4KB (MB/s)** | **39.30** | **7.03** | 7.23 |
| **Normalized** | 100% | 17.89% | 18.4% |
| **Standard Deviation** | 0.9% | 0.1% | 0.8% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 4KB (IOPS)** | 10133 | | |
| **Standard Deviation** | 1.1% | | |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 8MB (MB/s)** | **5626** | 137 | **99.40** |
| **Normalized** | 100% | 2.44% | 1.77% |
| **Standard Deviation** | 0.1% | 3.4% | 3.5% |
| **Flexible IO Tester - Rand Write - Linux AIO - No - No - 16KB (MB/s)** | **564** | 8.69 | **5.05** |
| **Normalized** | 100% | 1.54% | 0.9% |
| **Standard Deviation** | 1.5% | 14.9% | 23.4% |
| **Flexible IO Tester - Rand Write - Linux AIO - No - No - 16KB (IOPS)** | 36067 | | |
| **Standard Deviation** | 1.5% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 4KB (MB/s)** | **468** | 2.40 | **2.33** |
| **Normalized** | 100% | 0.51% | 0.5% |
| **Standard Deviation** | 2.5% | 25.8% | 18.3% |

# HD+Crypto

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|---|---|---|---|
| **Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 4KB (IOPS)** | 120000 | | |
| **Standard Deviation** | 2.2% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 8MB (MB/s)** | **685** | 72.50 | **22.53** |
| **Normalized** | 100% | 10.58% | 3.29% |
| **Standard Deviation** | 3.3% | 0.4% | 3.1% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (MB/s)** | **1938** | 4.99 | **4.81** |
| **Normalized** | 100% | 0.26% | 0.25% |
| **Standard Deviation** | 2.4% | 17.9% | 17.3% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 4KB (IOPS)** | 496000 | | |
| **Standard Deviation** | 2.5% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 8MB (MB/s)** | **3677** | 78.57 | **35.63** |
| **Normalized** | 100% | 2.14% | 0.97% |
| **Standard Deviation** | 3.3% | 2.7% | 1.3% |
| **Flexible IO Tester - Seq Read - Sync - No - Yes - 256KB (MB/s)** | **829** | 62.90 | **54.73** |
| **Normalized** | 100% | 7.59% | 6.6% |
| **Standard Deviation** | 0.2% | 0.9% | 1% |
| **Flexible IO Tester - Seq Read - Sync - Yes - No - 256KB (MB/s)** | **8885** | 459 | **335** |
| **Normalized** | 100% | 5.17% | 3.77% |
| **Standard Deviation** | 0.1% | 2% | 5.4% |
| **Flexible IO Tester - Seq Read - Sync - Yes - No - 256KB (IOPS)** | 35533 | | |
| **Standard Deviation** | 0.2% | | |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 16KB (MB/s)** | **7136** | 377 | **270** |
| **Normalized** | 100% | 5.28% | 3.78% |
| **Standard Deviation** | 0.5% | 2.3% | 0.6% |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 16KB (IOPS)** | **456667** | 24133 | **17300** |
| **Normalized** | 100% | 5.28% | 3.79% |
| **Standard Deviation** | 0.5% | 2.3% | 0.6% |
| **Flexible IO Tester - Seq Write - Sync - No - No - 256KB (MB/s)** | **728** | 39.77 | **11.28** |
| **Normalized** | 100% | 5.46% | 1.55% |
| **Standard Deviation** | 1.2% | 1.4% | 8.9% |
| **Flexible IO Tester - Seq Write - Sync - No - Yes - 16KB (MB/s)** | **483** | **6.90** | 7.19 |
| **Normalized** | 100% | 1.43% | 1.49% |
| **Standard Deviation** | 3.1% | 0.3% | 11.1% |
| **Flexible IO Tester - Seq Write - Sync - No - Yes - 16KB (IOPS)** | 30567 | | |
| **Standard Deviation** | 1.3% | | |
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 16KB (MB/s)** | **4911** | 55.67 | **12.43** |
| **Normalized** | 100% | 1.13% | 0.25% |
| **Standard Deviation** | 0.5% | 1.5% | 3.3% |

| | | | |
|---|---|---|---|
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 16KB (IOPS)** | 314333 | | |
| **Standard Deviation** | 0.4% | | |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 4KB (MB/s)** | **3512** | 55.30 | **12.00** |
| **Normalized** | 100% | 1.57% | 0.34% |
| **Standard Deviation** | 0.3% | 2.1% | 2.5% |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 4KB (IOPS)** | **899000** | **14133** | |
| **Normalized** | 100% | 1.57% | |
| **Standard Deviation** | | 2.3% | |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 8MB (MB/s)** | **3819** | 54.43 | **12.13** |
| **Normalized** | 100% | 1.43% | 0.32% |
| **Standard Deviation** | 4.8% | 3.1% | 5.8% |
| **Flexible IO Tester - Rand Read - Linux AIO - No - Yes - 256KB (MB/s)** | **1561** | 76.07 | **63.10** |
| **Normalized** | 100% | 4.87% | 4.04% |
| **Standard Deviation** | | 0.1% | 0.4% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 256KB (MB/s)** | **5490** | 362 | **199** |
| **Normalized** | 100% | 6.59% | 3.62% |
| **Standard Deviation** | 0.3% | 1.7% | 9.9% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - No - 256KB (IOPS)** | 21633 | | |
| **Standard Deviation** | 2.5% | | |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 16KB (MB/s)** | **3969** | 21.10 | **19.30** |
| **Normalized** | 100% | 0.53% | 0.49% |
| **Standard Deviation** | 0.6% | 0.5% | 2.7% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 16KB (IOPS)** | 254333 | | |
| **Standard Deviation** | 0.6% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - No - No - 256KB (MB/s)** | **586** | 35.15 | **8.13** |
| **Normalized** | 100% | 6% | 1.39% |
| **Standard Deviation** | 4.7% | 5.8% | 6.5% |
| **Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 16KB (MB/s)** | **568** | 8.57 | **5.04** |
| **Normalized** | 100% | 1.51% | 0.89% |
| **Standard Deviation** | 1.8% | 8.5% | 26.5% |
| **Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 16KB (IOPS)** | 36333 | | |
| **Standard Deviation** | 1.8% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 16KB (MB/s)** | **3529** | 12.86 | **8.03** |
| **Normalized** | 100% | 0.36% | 0.23% |
| **Standard Deviation** | 3.4% | 22.2% | 36% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 16KB (IOPS)** | 225667 | | |
| **Standard Deviation** | 3.4% | | |

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|---|---|---|---|
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 4KB (MB/s)** | **1945** | **4.49** | 4.64 |
| **Normalized** | 100% | 0.23% | 0.24% |
| **Standard Deviation** | 1.6% | 19.3% | 11.4% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 4KB (IOPS)** | 497667 | | |
| **Standard Deviation** | 1.7% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 8MB (MB/s)** | **3695** | 80.30 | **35.76** |
| **Normalized** | 100% | 2.17% | 0.97% |
| **Standard Deviation** | 3.4% | 0.4% | 3.9% |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 256KB (MB/s)** | **8921** | 449 | **410** |
| **Normalized** | 100% | 5.03% | 4.6% |
| **Standard Deviation** | 0.4% | | 2.3% |
| **Flexible IO Tester - Seq Read - Sync - Yes - Yes - 256KB (IOPS)** | 35667 | | |
| **Standard Deviation** | 0.4% | | |
| **Flexible IO Tester - Seq Write - Sync - No - Yes - 256KB (MB/s)** | **743** | 39.54 | **11.45** |
| **Normalized** | 100% | 5.32% | 1.54% |
| **Standard Deviation** | 3.5% | 3.1% | 9.8% |
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 256KB (MB/s)** | **5231** | 55.67 | **11.35** |
| **Normalized** | 100% | 1.06% | 0.22% |
| **Standard Deviation** | 10.3% | 1.7% | 3% |
| **Flexible IO Tester - Seq Write - Sync - Yes - No - 256KB (IOPS)** | 20842 | | |
| **Standard Deviation** | 11.1% | | |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 16KB (MB/s)** | **4908** | 55.63 | **11.23** |
| **Normalized** | 100% | 1.13% | 0.23% |
| **Standard Deviation** | 0.4% | 3.2% | 1.9% |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 16KB (IOPS)** | 314000 | | |
| **Standard Deviation** | 0.6% | | |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 256KB (MB/s)** | **5499** | 275 | **241** |
| **Normalized** | 100% | 5% | 4.38% |
| **Standard Deviation** | 0.5% | 6.6% | 5% |
| **Flexible IO Tester - Rand Read - Linux AIO - Yes - Yes - 256KB (IOPS)** | 22033 | | |
| **Standard Deviation** | 0.5% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - No - Yes - 256KB (MB/s)** | **589** | 34.70 | **8.40** |
| **Normalized** | 100% | 5.89% | 1.43% |
| **Standard Deviation** | 6.4% | 8.9% | 8.1% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 256KB (MB/s)** | **3881** | 38.94 | **9.83** |
| **Normalized** | 100% | 1% | 0.25% |
| **Standard Deviation** | 3.4% | 7.1% | 6% |

| | | | |
|---|---|---|---|
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - No - 256KB (IOPS)** | 15533 | | |
| **Standard Deviation** | 3.5% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 16KB (MB/s)** | **3600** | 11.45 | **7.00** |
| **Normalized** | 100% | 0.32% | 0.19% |
| **Standard Deviation** | 1.9% | 18.2% | 32.7% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 16KB (IOPS)** | 230000 | | |
| **Standard Deviation** | 1.9% | | |
| **Flexible IO Tester - Seq Read - Linux AIO - No - No - 4KB (MB/s)** | **1079** | **36.73** | 52.15 |
| **Normalized** | 100% | 3.4% | 4.83% |
| **Standard Deviation** | 2.2% | 0.2% | 9.3% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - No - 4KB (IOPS)** | **276000** | | **13740** |
| **Normalized** | 100% | | 4.98% |
| **Standard Deviation** | 2.2% | | 0.6% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - No - 8MB (MB/s)** | **1707** | **62.20** | 80.57 |
| **Normalized** | 100% | 3.64% | 4.72% |
| **Standard Deviation** | | 0% | 0.3% |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 256KB (MB/s)** | **5369** | 56.10 | **12.39** |
| **Normalized** | 100% | 1.04% | 0.23% |
| **Standard Deviation** | 6% | 0.5% | 4.9% |
| **Flexible IO Tester - Seq Write - Sync - Yes - Yes - 256KB (IOPS)** | 21473 | | |
| **Standard Deviation** | 6% | | |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 256KB (MB/s)** | **3956** | 39.48 | **9.75** |
| **Normalized** | 100% | 1% | 0.25% |
| **Standard Deviation** | 0.3% | 4.8% | 7.2% |
| **Flexible IO Tester - Rand Write - Linux AIO - Yes - Yes - 256KB (IOPS)** | 15833 | | |
| **Standard Deviation** | 0.4% | | |
| **Flexible IO Tester - Seq Read - Linux AIO - No - No - 16KB (MB/s)** | **1557** | 69.30 | **66.63** |
| **Normalized** | 100% | 4.45% | 4.28% |
| **Standard Deviation** | | 1% | 0.9% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - No - 16KB (IOPS)** | 99667 | | |
| **Standard Deviation** | 0.1% | | |
| **Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (MB/s)** | **1083** | **52.93** | 58.00 |
| **Normalized** | 100% | 4.89% | 5.36% |
| **Standard Deviation** | 0.6% | 1.1% | 0.3% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (IOPS)** | **277333** | **13567** | 14867 |
| **Normalized** | 100% | 4.89% | 5.36% |
| **Standard Deviation** | 0.8% | 0.9% | 0.4% |

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|---|---|---|---|
| **Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (MB/s)** | **1706** | 93.10 | **86.67** |
| **Normalized** | 100% | 5.46% | 5.08% |
| **Standard Deviation** | | 1.2% | 0.4% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (MB/s)** | **2691** | **115** | 116 |
| **Normalized** | 100% | 4.27% | 4.31% |
| **Standard Deviation** | 0.6% | 3.4% | 16.3% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 4KB (IOPS)** | **689000** | **29233** | 29517 |
| **Normalized** | 100% | 4.24% | 4.28% |
| **Standard Deviation** | 0.6% | 3.3% | 16.4% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 8MB (MB/s)** | **5604** | 106 | **95.20** |
| **Normalized** | 100% | 1.89% | 1.7% |
| **Standard Deviation** | 0.2% | | 0.3% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - No - 4KB (MB/s)** | **640** | 20.41 | **11.57** |
| **Normalized** | 100% | 3.19% | 1.81% |
| **Standard Deviation** | 6.3% | 9% | 5.7% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - No - 4KB (IOPS)** | 163750 | | |
| **Standard Deviation** | 6.2% | | |
| **Flexible IO Tester - Seq Write - Linux AIO - No - No - 8MB (MB/s)** | **718** | 75.60 | **23.98** |
| **Normalized** | 100% | 10.53% | 3.34% |
| **Standard Deviation** | 9.6% | 0.3% | 3.3% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - No - 256KB (MB/s)** | **1653** | 83.37 | **78.43** |
| **Normalized** | 100% | 5.04% | 4.74% |
| **Standard Deviation** | 0% | 0.1% | 0.1% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 16KB (MB/s)** | **1551** | 78.83 | **75.70** |
| **Normalized** | 100% | 5.08% | 4.88% |
| **Standard Deviation** | 0% | 0.1% | 0% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 16KB (IOPS)** | 99267 | | |
| **Standard Deviation** | 0.1% | | |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 16KB (MB/s)** | **5650** | 248 | **230** |
| **Normalized** | 100% | 4.39% | 4.07% |
| **Standard Deviation** | 0.3% | 1.2% | 3.4% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 16KB (IOPS)** | **361667** | 15233 | **14727** |
| **Normalized** | 100% | 4.21% | 4.07% |
| **Standard Deviation** | 0.3% | 2.7% | 3.5% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 4KB (MB/s)** | **2695** | 126 | **111** |
| **Normalized** | 100% | 4.68% | 4.12% |
| **Standard Deviation** | 0.3% | 13.8% | 2.3% |

| | | | |
|---|---|---|---|
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 4KB (IOPS)** | **690000** | 32217 | **28500** |
| **Normalized** | 100% | 4.67% | 4.13% |
| **Standard Deviation** | 0.4% | 13.7% | 2% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 8MB (MB/s)** | **5619** | 109 | **103** |
| **Normalized** | 100% | 1.94% | 1.83% |
| **Standard Deviation** | 0.3% | 0.5% | |
| **Flexible IO Tester - Seq Write - Linux AIO - No - No - 16KB (MB/s)** | **731** | 47.77 | **12.09** |
| **Normalized** | 100% | 6.53% | 1.65% |
| **Standard Deviation** | 3.4% | 2% | 3.4% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - No - 16KB (IOPS)** | 46775 | | |
| **Standard Deviation** | 3.4% | | |
| **Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (MB/s)** | **641** | 21.20 | **11.58** |
| **Normalized** | 100% | 3.31% | 1.81% |
| **Standard Deviation** | 5.1% | 0% | 3.4% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (IOPS)** | 164000 | | |
| **Standard Deviation** | 5.3% | | |
| **Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB (MB/s)** | **689** | 77.20 | **24.23** |
| **Normalized** | 100% | 11.2% | 3.52% |
| **Standard Deviation** | 10.1% | 0.4% | 0.2% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (MB/s)** | **2037** | 56.07 | **12.37** |
| **Normalized** | 100% | 2.75% | 0.61% |
| **Standard Deviation** | 8.3% | 2.3% | 2.6% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 4KB (IOPS)** | **521500** | **14033** | |
| **Normalized** | 100% | 2.69% | |
| **Standard Deviation** | 8.3% | 6.4% | |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 8MB (MB/s)** | **3680** | 79.57 | **36.73** |
| **Normalized** | 100% | 2.16% | 1% |
| **Standard Deviation** | 6.1% | 1.3% | 1% |
| **Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 256KB (MB/s)** | **1684** | 82.57 | **78.63** |
| **Normalized** | 100% | 4.9% | 4.67% |
| **Standard Deviation** | | 0.6% | 0.2% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 256KB (MB/s)** | **5517** | 398 | **371** |
| **Normalized** | 100% | 7.21% | 6.72% |
| **Standard Deviation** | 0.4% | 4% | 0.3% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - No - 256KB (IOPS)** | 21733 | | |
| **Standard Deviation** | 2.9% | | |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 16KB (MB/s)** | **5621** | 241 | **234** |
| **Normalized** | 100% | 4.29% | 4.16% |
| **Standard Deviation** | 0.2% | 2.5% | 3.3% |

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|---|---|---|---|
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 16KB (IOPS)** | **360000** | 15400 | **14975** |
| **Normalized** | 100% | 4.28% | 4.16% |
| **Standard Deviation** | 0.3% | 2.3% | 3.1% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - No - 256KB (MB/s)** | **708** | 60.90 | **11.99** |
| **Normalized** | 100% | 8.6% | 1.69% |
| **Standard Deviation** | 5.5% | 1.2% | 5.9% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 16KB (MB/s)** | **716** | 48.30 | **11.53** |
| **Normalized** | 100% | 6.75% | 1.61% |
| **Standard Deviation** | 5.8% | 1.4% | 6.8% |
| **Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 16KB (IOPS)** | 45700 | | |
| **Standard Deviation** | 6% | | |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 16KB (MB/s)** | **3839** | 55.17 | **12.70** |
| **Normalized** | 100% | 1.44% | 0.33% |
| **Standard Deviation** | 6.5% | 2.4% | 3.4% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 16KB (IOPS)** | 245667 | | |
| **Standard Deviation** | 6.4% | | |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 4KB (MB/s)** | **2221** | 54.87 | **12.00** |
| **Normalized** | 100% | 2.47% | 0.54% |
| **Standard Deviation** | 0.6% | 0.9% | 2.5% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 4KB (IOPS)** | **568667** | **13733** | |
| **Normalized** | 100% | 2.41% | |
| **Standard Deviation** | 0.6% | 4.7% | |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 8MB (MB/s)** | **3690** | 78.20 | **37.63** |
| **Normalized** | 100% | 2.12% | 1.02% |
| **Standard Deviation** | 5% | 2.9% | 1% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 256KB (MB/s)** | **5529** | 398 | **382** |
| **Normalized** | 100% | 7.2% | 6.91% |
| **Standard Deviation** | 0.1% | 3.4% | 2% |
| **Flexible IO Tester - Seq Read - Linux AIO - Yes - Yes - 256KB (IOPS)** | 22100 | | |
| **Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 256KB (MB/s)** | **702** | 59.68 | **12.67** |
| **Normalized** | 100% | 8.5% | 1.8% |
| **Standard Deviation** | 3.4% | 3.3% | 2.8% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 256KB (MB/s)** | **3895** | 55.60 | **13.52** |
| **Normalized** | 100% | 1.43% | 0.35% |
| **Standard Deviation** | 7.2% | 1.3% | 3.1% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - No - 256KB (IOPS)** | 15564 | | |
| **Standard Deviation** | 7.2% | | |

# HD+Crypto

| | | | |
|---|---|---|---|
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 16KB (MB/s)** | **3954** | 55.30 | **12.57** |
| **Normalized** | 100% | 1.4% | 0.32% |
| **Standard Deviation** | 0.4% | 1.1% | 1.2% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 16KB (IOPS)** | 253000 | | |
| **Standard Deviation** | 0.4% | | |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 256KB (MB/s)** | **3998** | 56.80 | **12.87** |
| **Normalized** | 100% | 1.42% | 0.32% |
| **Standard Deviation** | 0.2% | 1.9% | 1.6% |
| **Flexible IO Tester - Seq Write - Linux AIO - Yes - Yes - 256KB (IOPS)** | 15967 | | |
| **Standard Deviation** | 0.4% | | |
| **FS-Mark - 1.F.1.S (Files/s)** | **73.56** | 37.87 | **8.74** |
| **Normalized** | 100% | 51.48% | 11.88% |
| **Standard Deviation** | 16.5% | 2.8% | 24.7% |
| **FS-Mark - 5.F.1.S.4.T (Files/s)** | **99.87** | **41.68** | |
| **Normalized** | 100% | 41.73% | |
| **Standard Deviation** | 2% | 4.8% | |
| **FS-Mark - 1.F.1.S.N.S.F (Files/s)** | **2354** | **51.22** | |
| **Normalized** | 100% | 2.18% | |
| **Standard Deviation** | 0.1% | 18.4% | |
| **BlogBench - Read (Final Score)** | **599911** | **186288** | |
| **Normalized** | 100% | 31.05% | |
| **Standard Deviation** | 2.6% | 9.9% | |
| **BlogBench - Write (Final Score)** | **10824** | **188** | |
| **Normalized** | 100% | 1.74% | |
| **Standard Deviation** | 1.2% | 84.8% | |
| **Dbench - 1 (MB/s)** | **64.66** | **46.08** | |
| **Normalized** | 100% | 71.27% | |
| **Standard Deviation** | 0.4% | 2.4% | |
| **Dbench - 12 (MB/s)** | **359.25** | **77.56** | |
| **Normalized** | 100% | 21.59% | |
| **Standard Deviation** | 0.3% | 1.1% | |
| **Dbench - 256 (MB/s)** | **1452** | **11.52** | |
| **Normalized** | 100% | 0.79% | |
| **Standard Deviation** | 0.8% | 19.5% | |
| **hdparm Timed Disk Reads - /dev/sda (MB/s)** | **403.60** | **3.65** | |
| **Normalized** | 100% | 0.9% | |
| **Standard Deviation** | 0.1% | 0.2% | |
| **IOzone - 1MB - 512MB - Read Performance (MB/s)** | **5234** | **813** | |
| **Normalized** | 100% | 15.53% | |
| **Standard Deviation** | 53.3% | 0.4% | |
| **IOzone - 4Kb - 512MB - Read Performance (MB/s)** | **5091** | **816** | |
| **Normalized** | 100% | 16.03% | |
| **Standard Deviation** | 1.2% | 1.1% | |
| **IOzone - 1MB - 512MB - Write Performance (MB/s)** | **267.17** | **23.64** | |
| **Normalized** | 100% | 8.85% | |
| **Standard Deviation** | 8.5% | 52.8% | |

# HD+Crypto

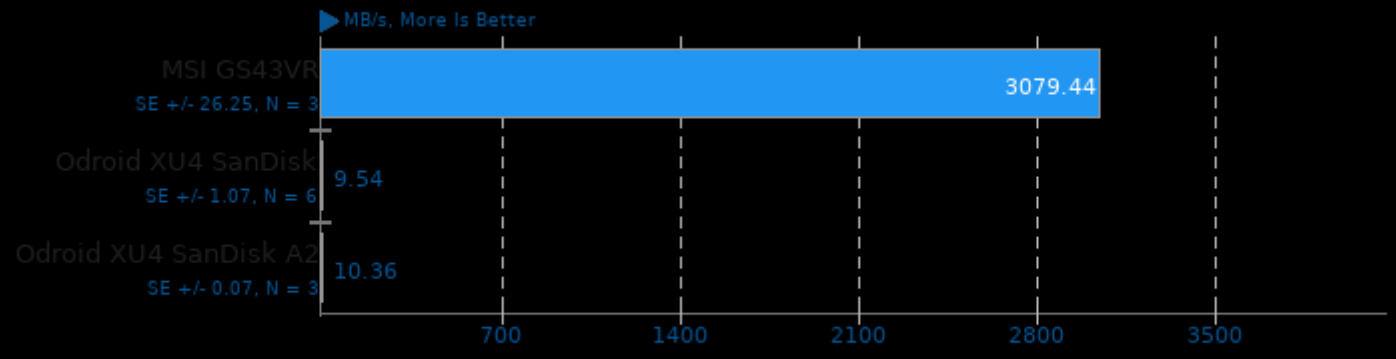
| | | |
|---|---|---|
| **IOzone - 4Kb - 512MB - Write Performance (MB/s)** | **236.16** | **19.63** |
| **Normalized** | 100% | 8.31% |
| **Standard Deviation** | 3.2% | 19.7% |
| **IOzone - 64Kb - 512MB - Read Performance (MB/s)** | **2745** | **880** |
| **Normalized** | 100% | 32.06% |
| **Standard Deviation** | 75.8% | 0.7% |
| **IOzone - 64Kb - 512MB - Write Performance (MB/s)** | **246.89** | **18.86** |
| **Normalized** | 100% | 7.64% |
| **Standard Deviation** | 23.3% | 50.2% |
| **Unpacking The Linux Kernel - linux-4.15.tar.xz (sec)** | **6.14** | **296.51** |
| **Normalized** | 100% | 2.07% |
| **Standard Deviation** | 0.6% | 12% |
| **Bork File Encrypter - F.E.T (sec)** | **8.16** | **195.59** |
| **Normalized** | 100% | 4.17% |
| **Standard Deviation** | 2.2% | 17.8% |
| **Botan - KASUMI - Encrypt (MiB/s)** | **77.93** | **28.20** |
| **Normalized** | 100% | 36.19% |
| **Standard Deviation** | 3.1% | 0.1% |
| **Botan - KASUMI - Decrypt (MiB/s)** | 76.01 | |
| **Standard Deviation** | 3.3% | |
| **Botan - AES-256 - Encrypt (MiB/s)** | **3304** | **43.04** |
| **Normalized** | 100% | 1.3% |
| **Standard Deviation** | 1.8% | 0.3% |
| **Botan - AES-256 - Decrypt (MiB/s)** | 3317 | |
| **Standard Deviation** | 1.1% | |
| **Botan - Twofish - Encrypt (MiB/s)** | **308.55** | **81.04** |
| **Normalized** | 100% | 26.26% |
| **Standard Deviation** | 2.8% | 0.2% |
| **Botan - Twofish - Decrypt (MiB/s)** | 308.24 | |
| **Standard Deviation** | 2% | |
| **Botan - Blowfish - Encrypt (MiB/s)** | **250.00** | **87.63** |
| **Normalized** | 100% | 35.05% |
| **Standard Deviation** | 1.8% | 0.2% |
| **Botan - Blowfish - Decrypt (MiB/s)** | 249.23 | |
| **Standard Deviation** | 1.6% | |
| **Botan - CAST-256 - Encrypt (MiB/s)** | **123.95** | **43.87** |
| **Normalized** | 100% | 35.39% |
| **Standard Deviation** | 0.8% | 2.9% |
| **Botan - CAST-256 - Decrypt (MiB/s)** | 123.82 | |
| **Standard Deviation** | 0.9% | |
| **GnuPG - 2.F.E (sec)** | **11.92** | **50.71** |
| **Normalized** | 100% | 23.51% |
| **Standard Deviation** | 2.5% | 3.2% |
| **Botan - KASUMI - Encrypt - Decrypt (MiB/s)** | | 27.92 |
| **Standard Deviation** | | 0% |
| **Botan - AES-256 - Encrypt - Decrypt (MiB/s)** | | 42.69 |
| **Standard Deviation** | | 0.2% |
| **Botan - Twofish - Encrypt - Decrypt (MiB/s)** | | 85.51 |
| **Standard Deviation** | | 0.3% |
| **Botan - Blowfish - Encrypt - Decrypt (MiB/s)** | | 87.85 |

| | |
|---|---|
| **Standard Deviation** | 0.2% |
| **Botan - CAST-256 - Encrypt - Decrypt** | 43.89 |
| **Standard Deviation** | 4% |

# HD+Crypto

## AIO-Stress 0.21

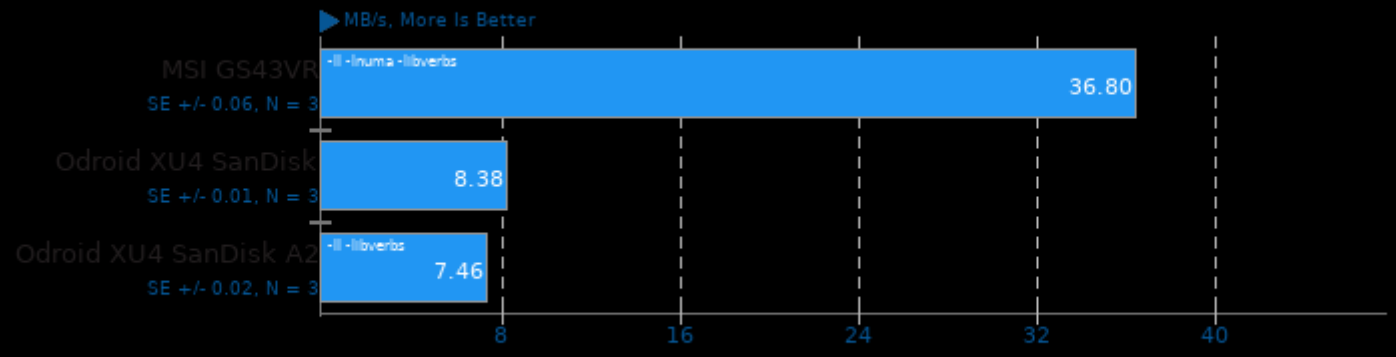
Test: Random Write




1. (CC) gcc options: -pthread -laio

## Flexible IO Tester 3.1

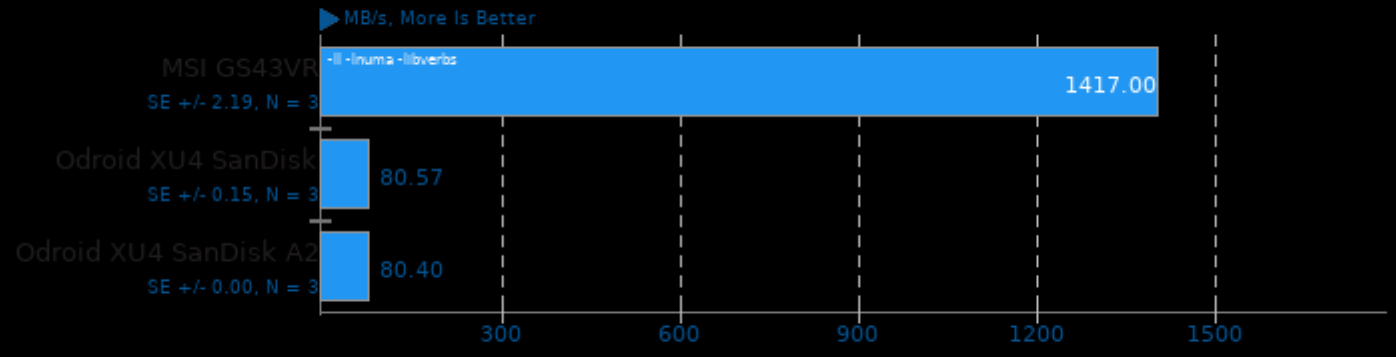
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory



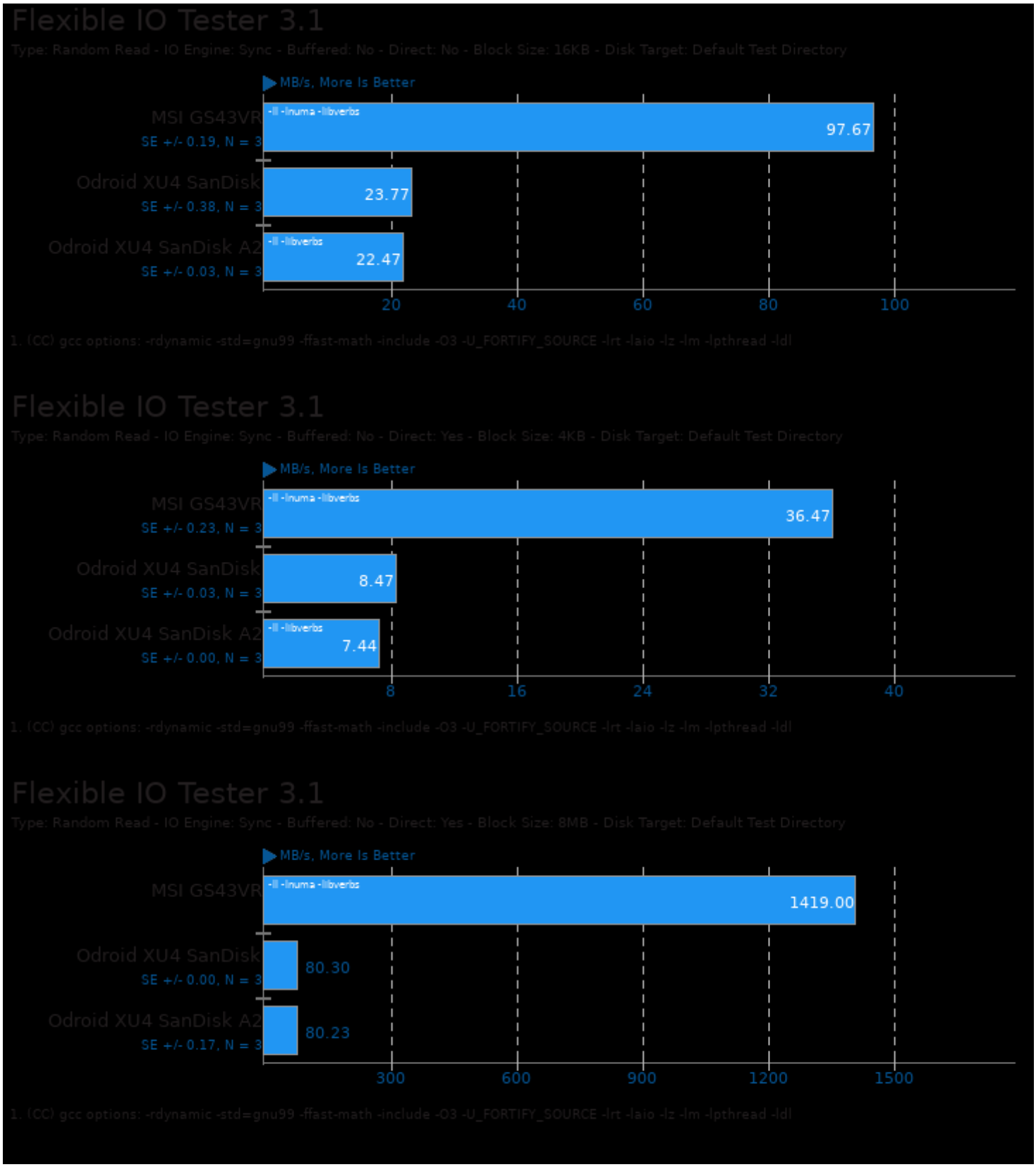

1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

## Flexible IO Tester 3.1

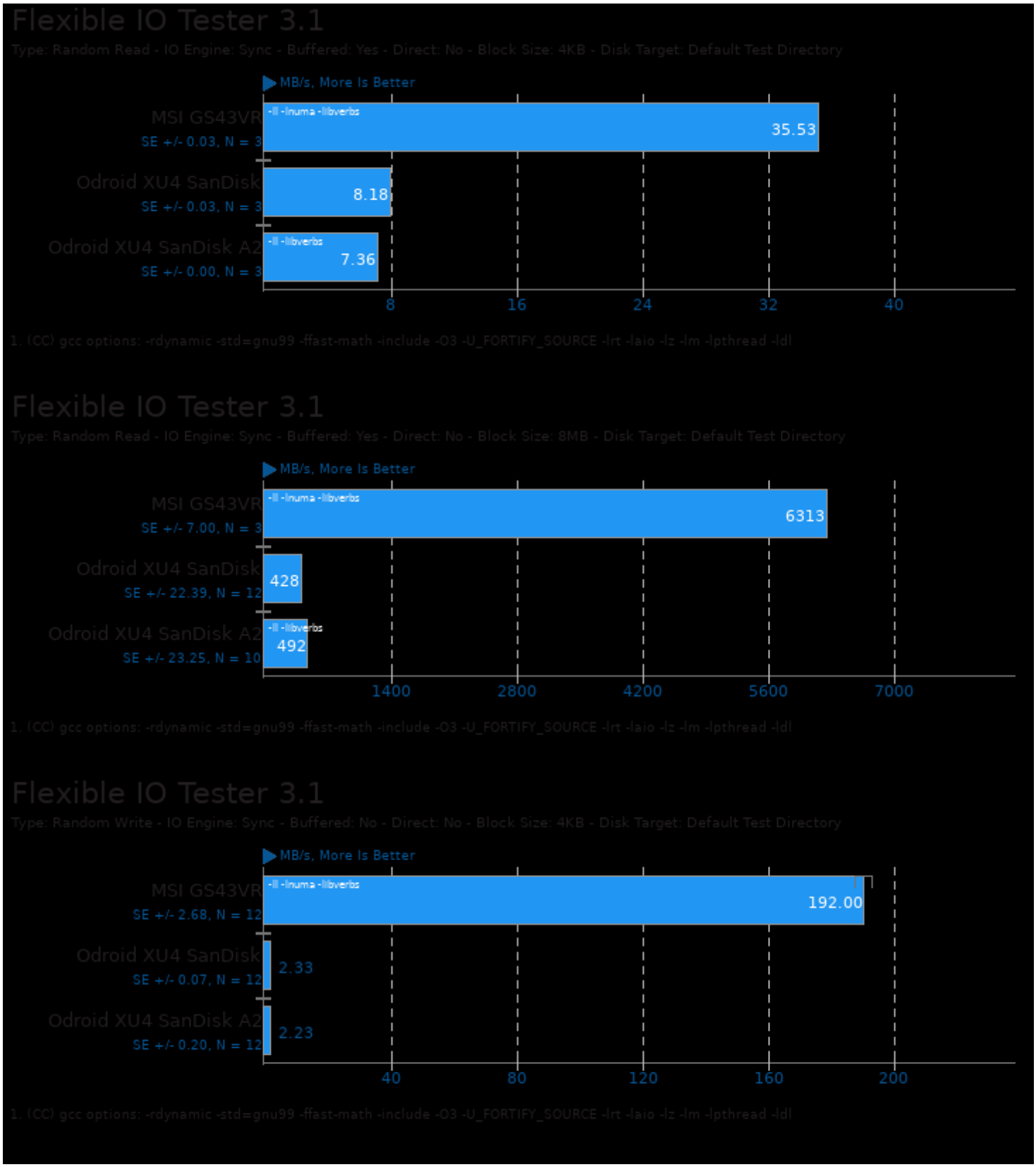
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory

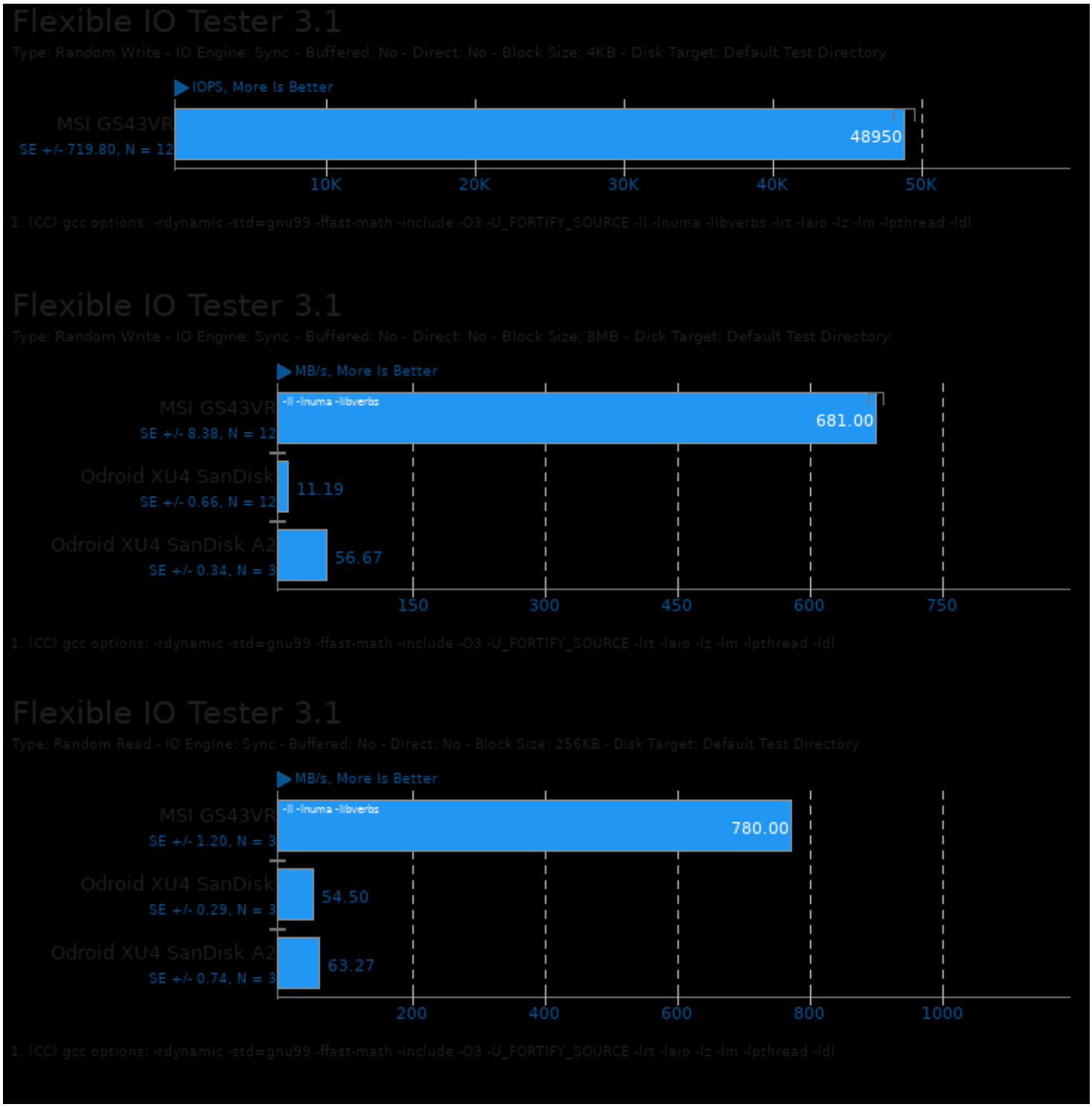



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

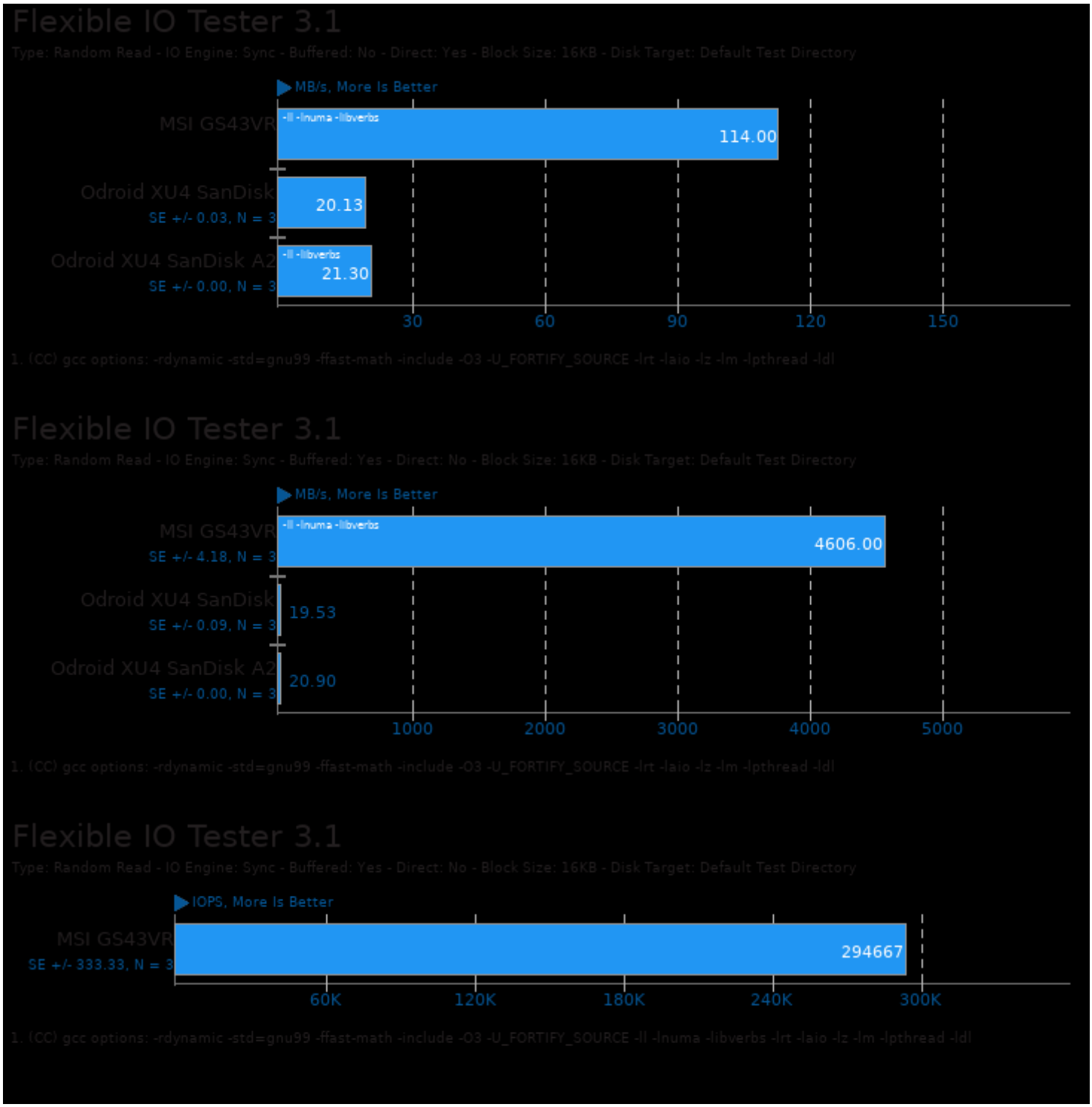

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.19, N = 3
-ldl -lnuma -libverbs
97.67
Odroid XU4 SanDisk
SE +/- 0.38, N = 3
23.77
Odroid XU4 SanDisk A2
SE +/- 0.03, N = 3
-ldl -libverbs
22.47
20
40
60
80
100
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.23, N = 3
-ldl -lnuma -libverbs
36.47
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
8.47
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
-ldl -libverbs
7.44
8
16
24
32
40
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ldl -lnuma -libverbs
1419.00
Odroid XU4 SanDisk
SE +/- 0.00, N = 3
80.30
Odroid XU4 SanDisk A2
SE +/- 0.17, N = 3
80.23
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

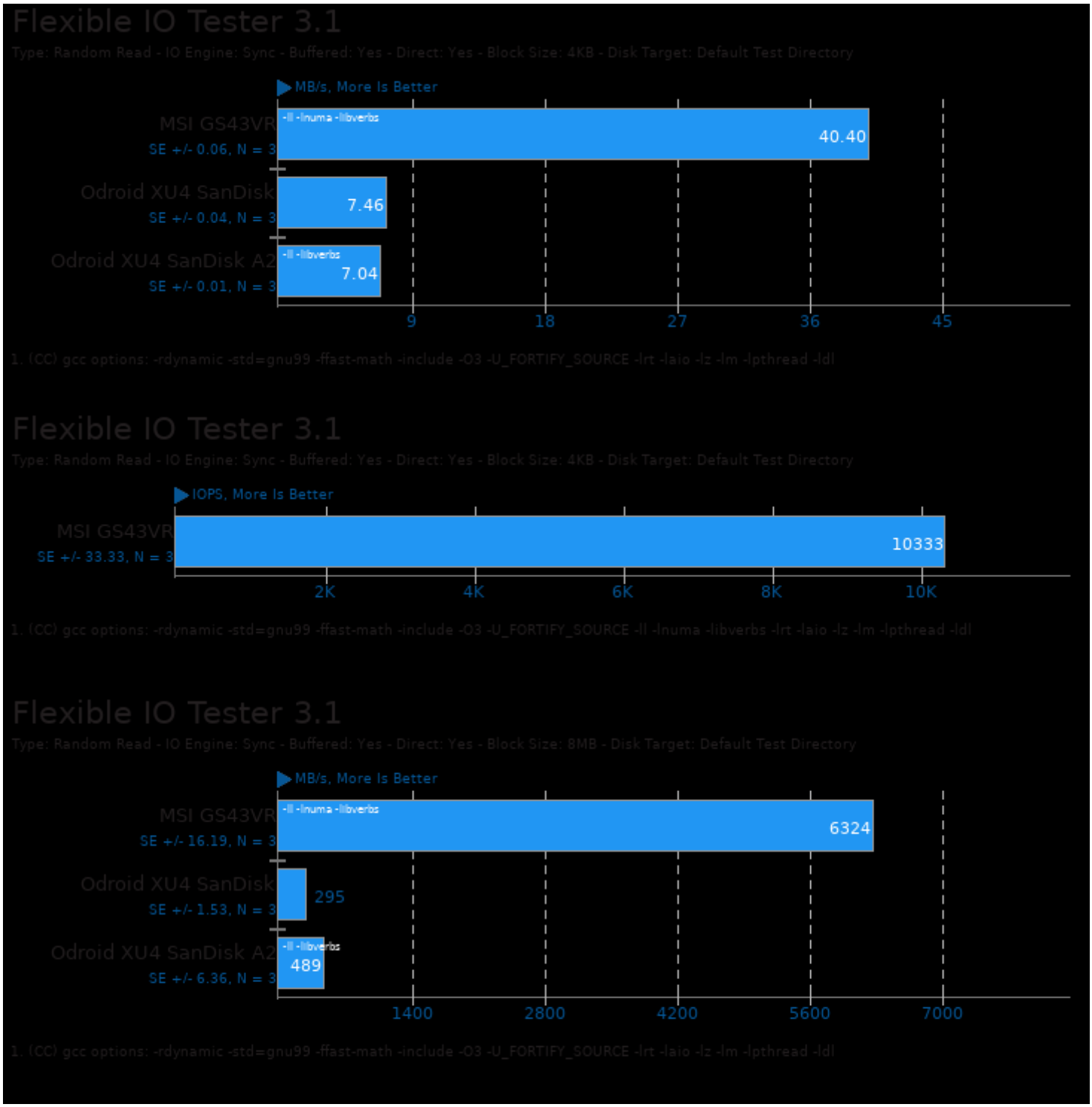

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.03, N = 3
-ldl -lnuma -libverbs
35.53
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
8.18
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
-ldl -libverbs
7.36
8
16
24
32
40
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 7.00, N = 3
-ldl -lnuma -libverbs
6313
Odroid XU4 SanDisk
SE +/- 22.39, N = 12
428
Odroid XU4 SanDisk A2
SE +/- 23.25, N = 10
-ldl -libverbs
492
1400
2800
4200
5600
7000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 2.68, N = 12
-ldl -lnuma -libverbs
192.00
Odroid XU4 SanDisk
SE +/- 0.07, N = 12
2.33
Odroid XU4 SanDisk A2
SE +/- 0.20, N = 12
2.23
40
80
120
160
200
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 719.80, N = 12
48950
10K
20K
30K
40K
50K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 8.38, N = 12
-ll -lnuma -libverbs
681.00
Odroid XU4 SanDisk
SE +/- 0.66, N = 12
11.19
Odroid XU4 SanDisk A2
SE +/- 0.34, N = 3
56.67
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 1.20, N = 3
-ll -lnuma -libverbs
780.00
Odroid XU4 SanDisk
SE +/- 0.29, N = 3
54.50
Odroid XU4 SanDisk A2
SE +/- 0.74, N = 3
63.27
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

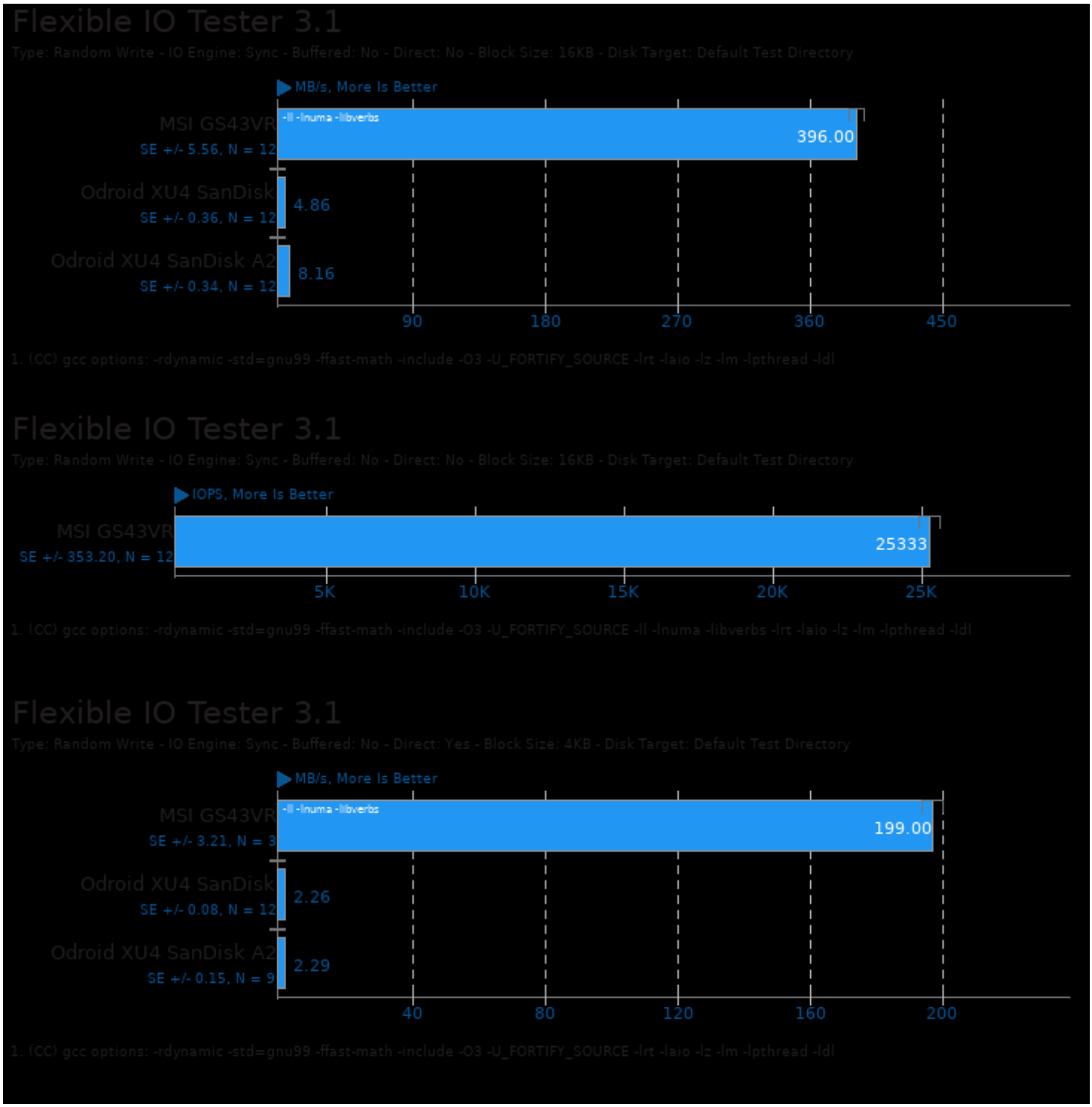
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
114.00
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
20.13
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
-ll -libverbs
21.30
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 4.18, N = 3
-ll -lnuma -libverbs
4606.00
Odroid XU4 SanDisk
SE +/- 0.09, N = 3
19.53
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
20.90
1000
2000
3000
4000
5000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 333.33, N = 3
294667
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

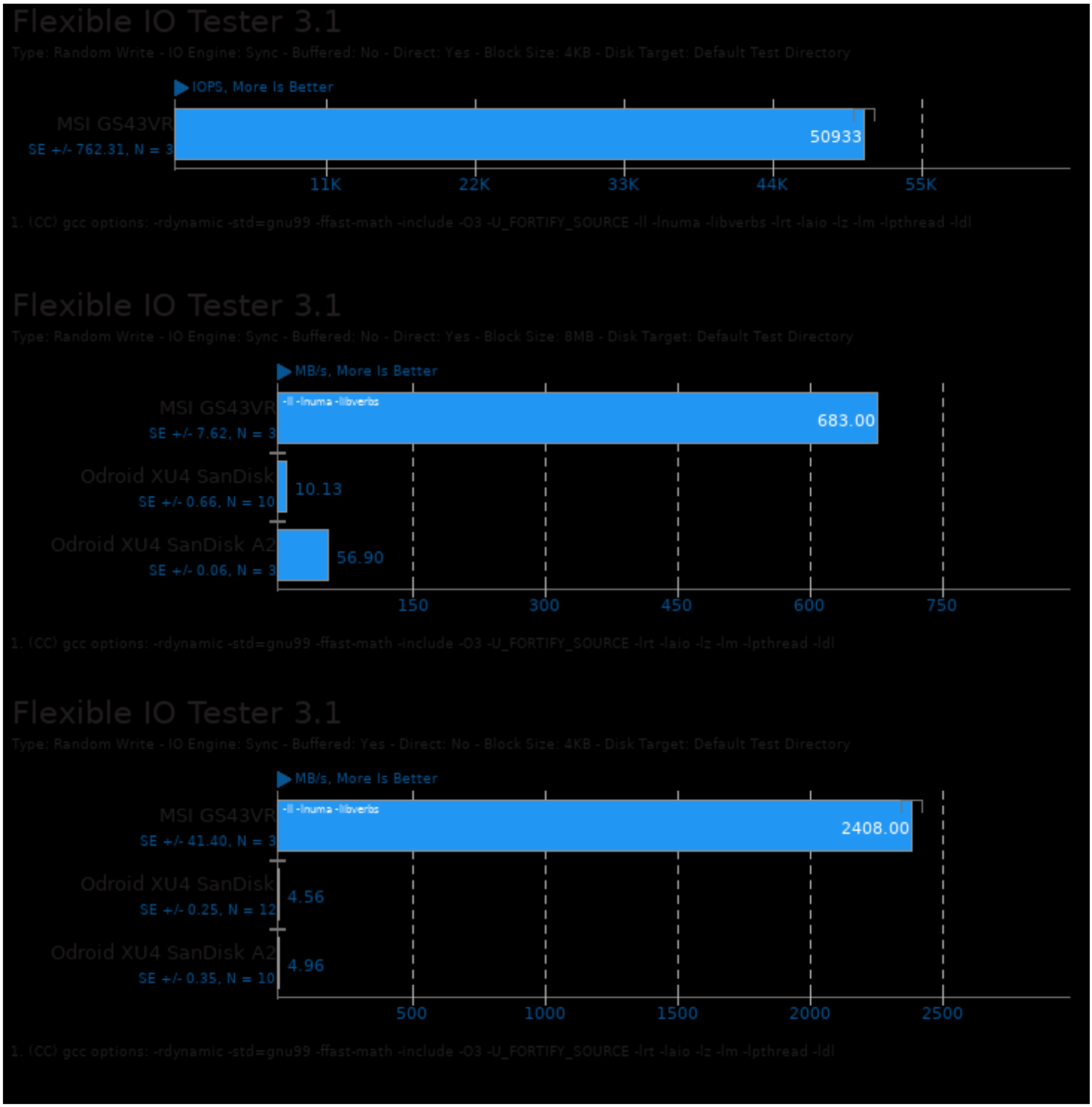
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.06, N = 3
-ll -lnuma -libverbs
40.40
Odroid XU4 SanDisk
SE +/- 0.04, N = 3
7.46
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
-ll -libverbs
7.04
9
18
27
36
45
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
10333
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 16.19, N = 3
-ll -lnuma -libverbs
6324
Odroid XU4 SanDisk
SE +/- 1.53, N = 3
295
Odroid XU4 SanDisk A2
SE +/- 6.36, N = 3
-ll -libverbs
489
1400
2800
4200
5600
7000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

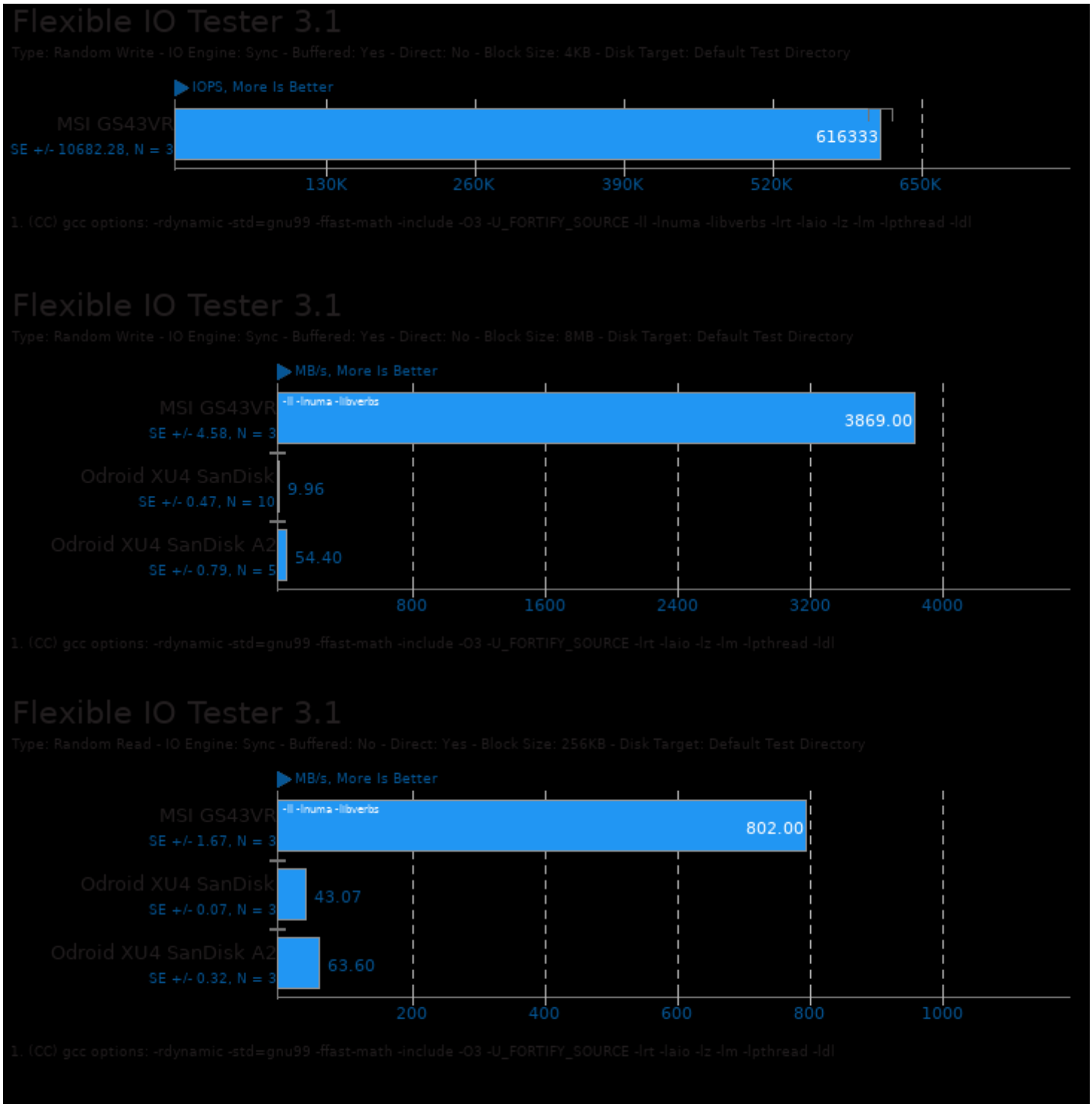
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 5.56, N = 12
-ll -lnuma -libverbs
396.00
Odroid XU4 SanDisk
SE +/- 0.36, N = 12
4.86
Odroid XU4 SanDisk A2
SE +/- 0.34, N = 12
8.16
90
180
270
360
450
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 353.20, N = 12
25333
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 3.21, N = 3
-ll -lnuma -libverbs
199.00
Odroid XU4 SanDisk
SE +/- 0.08, N = 12
2.26
Odroid XU4 SanDisk A2
SE +/- 0.15, N = 9
2.29
40
80
120
160
200
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

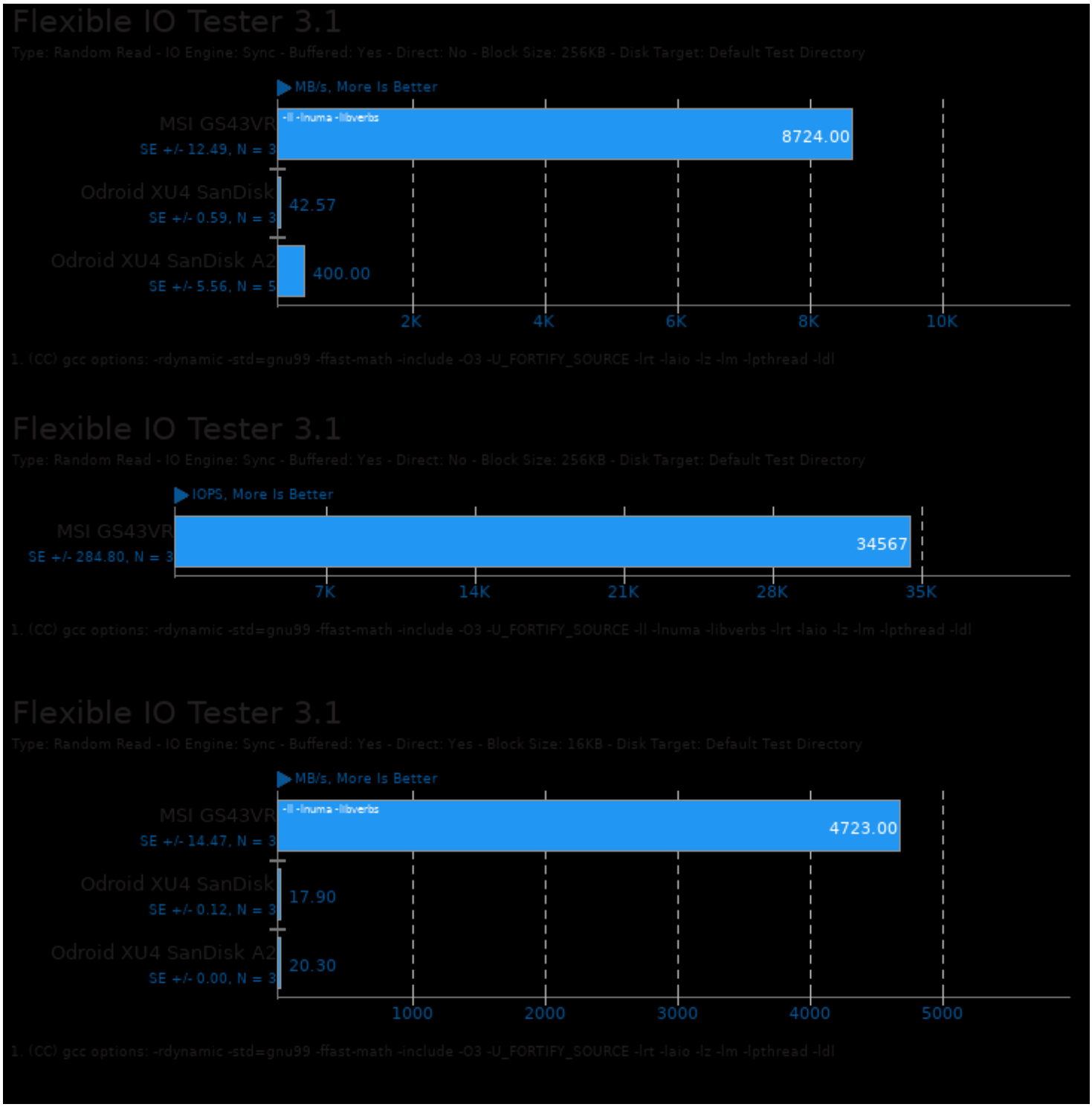
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 762.31, N = 3
50933
11K
22K
33K
44K
55K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 7.62, N = 3
-ll -lnuma -libverbs
683.00
Odroid XU4 SanDisk
SE +/- 0.66, N = 10
10.13
Odroid XU4 SanDisk A2
SE +/- 0.06, N = 3
56.90
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 41.40, N = 3
-ll -lnuma -libverbs
2408.00
Odroid XU4 SanDisk
SE +/- 0.25, N = 12
4.56
Odroid XU4 SanDisk A2
SE +/- 0.35, N = 10
4.96
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 10682.28, N = 3
616333
130K
260K
390K
520K
650K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 4.58, N = 3
3869.00
Odroid XU4 SanDisk
SE +/- 0.47, N = 10
9.96
Odroid XU4 SanDisk A2
SE +/- 0.79, N = 5
54.40
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 1.67, N = 3
802.00
Odroid XU4 SanDisk
SE +/- 0.07, N = 3
43.07
Odroid XU4 SanDisk A2
SE +/- 0.32, N = 3
63.60
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

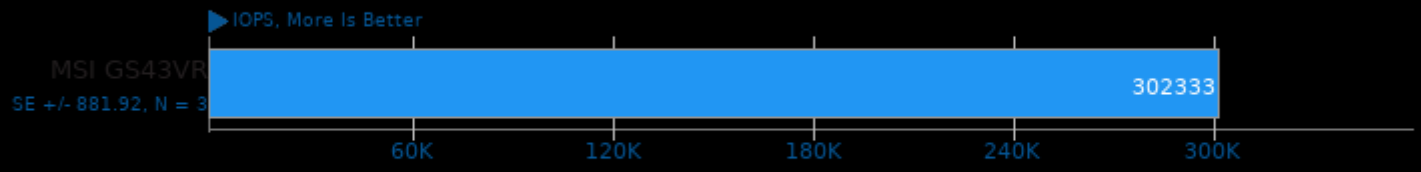
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 12.49, N = 3
-ll -lnuma -libverbs
8724.00
Odroid XU4 SanDisk
SE +/- 0.59, N = 3
42.57
Odroid XU4 SanDisk A2
SE +/- 5.56, N = 5
400.00
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 284.80, N = 3
34567
7K
14K
21K
28K
35K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 14.47, N = 3
-ll -lnuma -libverbs
4723.00
Odroid XU4 SanDisk
SE +/- 0.12, N = 3
17.90
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
20.30
1000
2000
3000
4000
5000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

## Flexible IO Tester 3.1

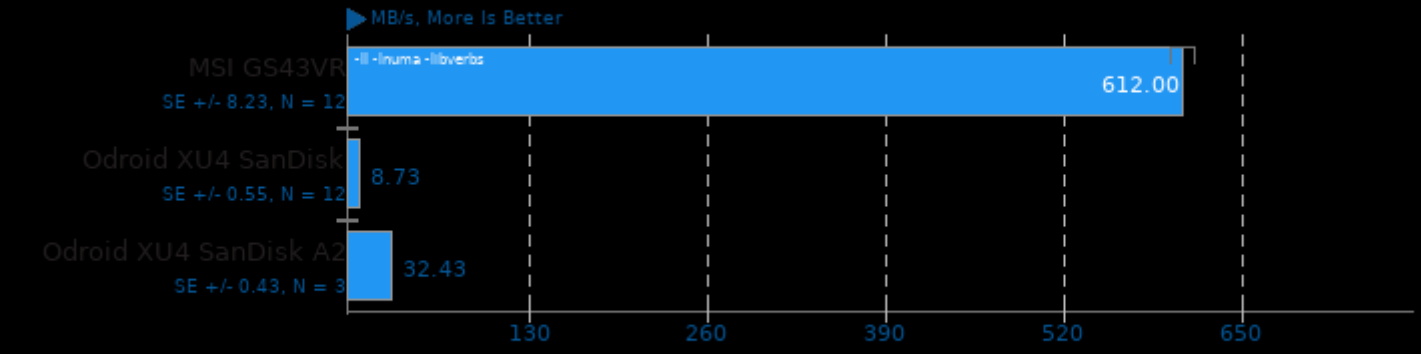
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory




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

## Flexible IO Tester 3.1

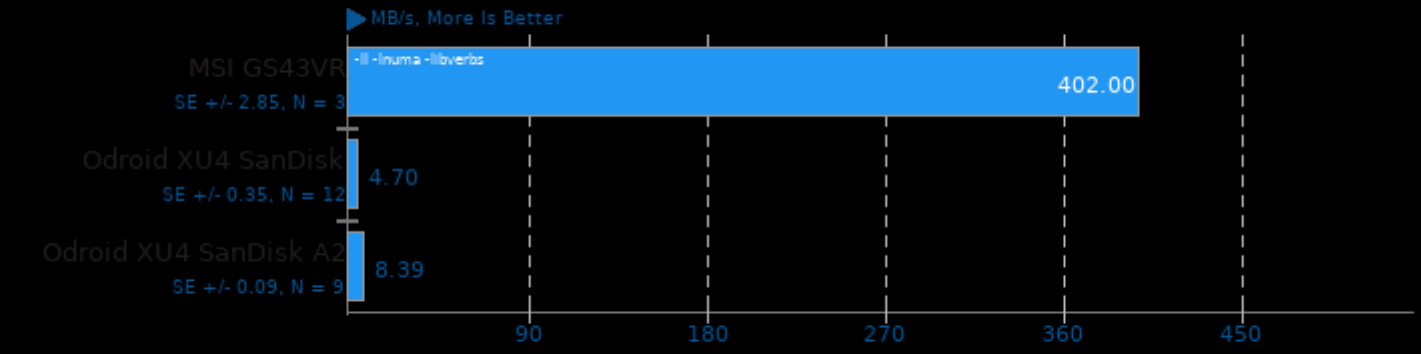
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory




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

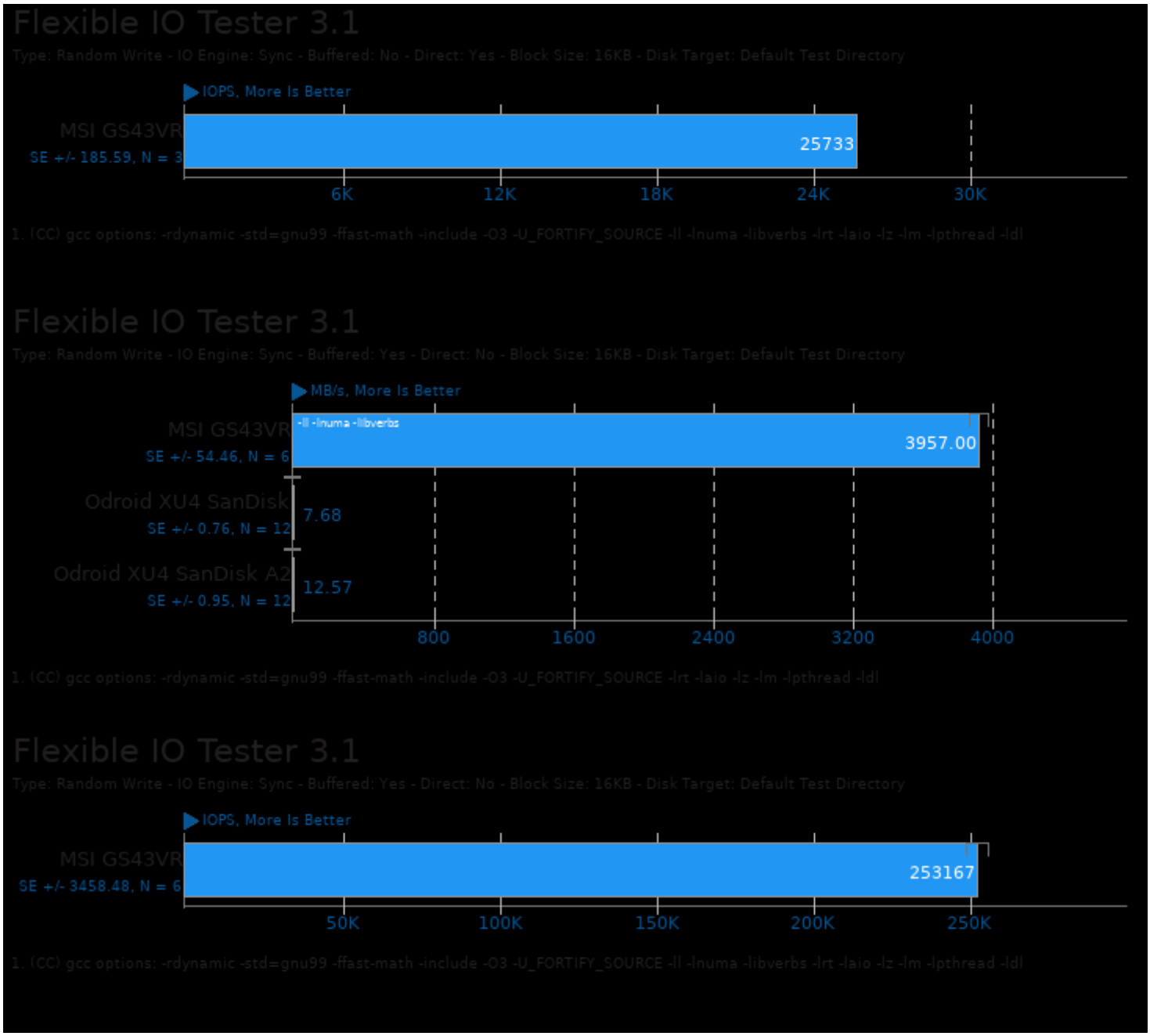
## Flexible IO Tester 3.1

Type: Random Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory

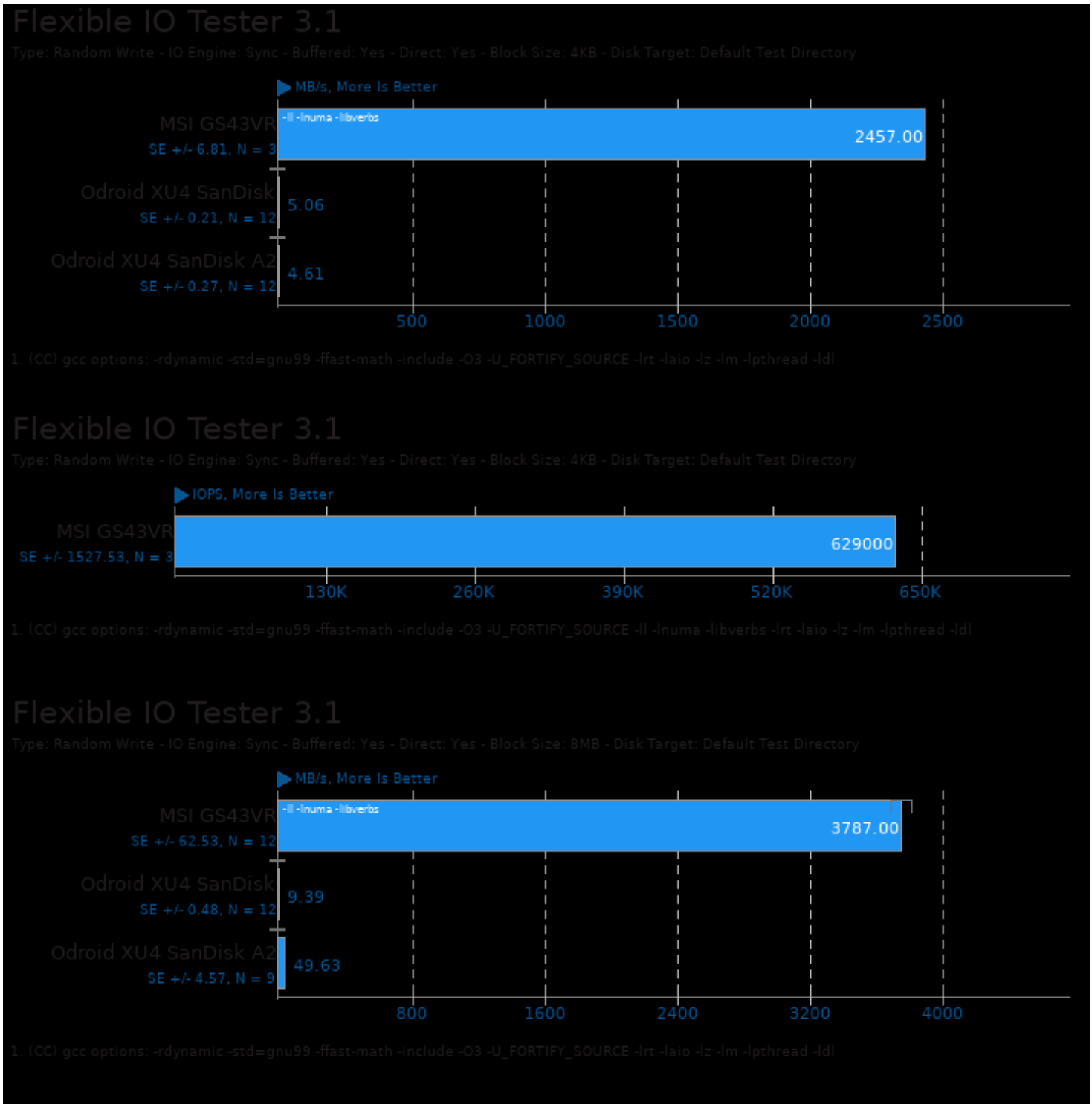



1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

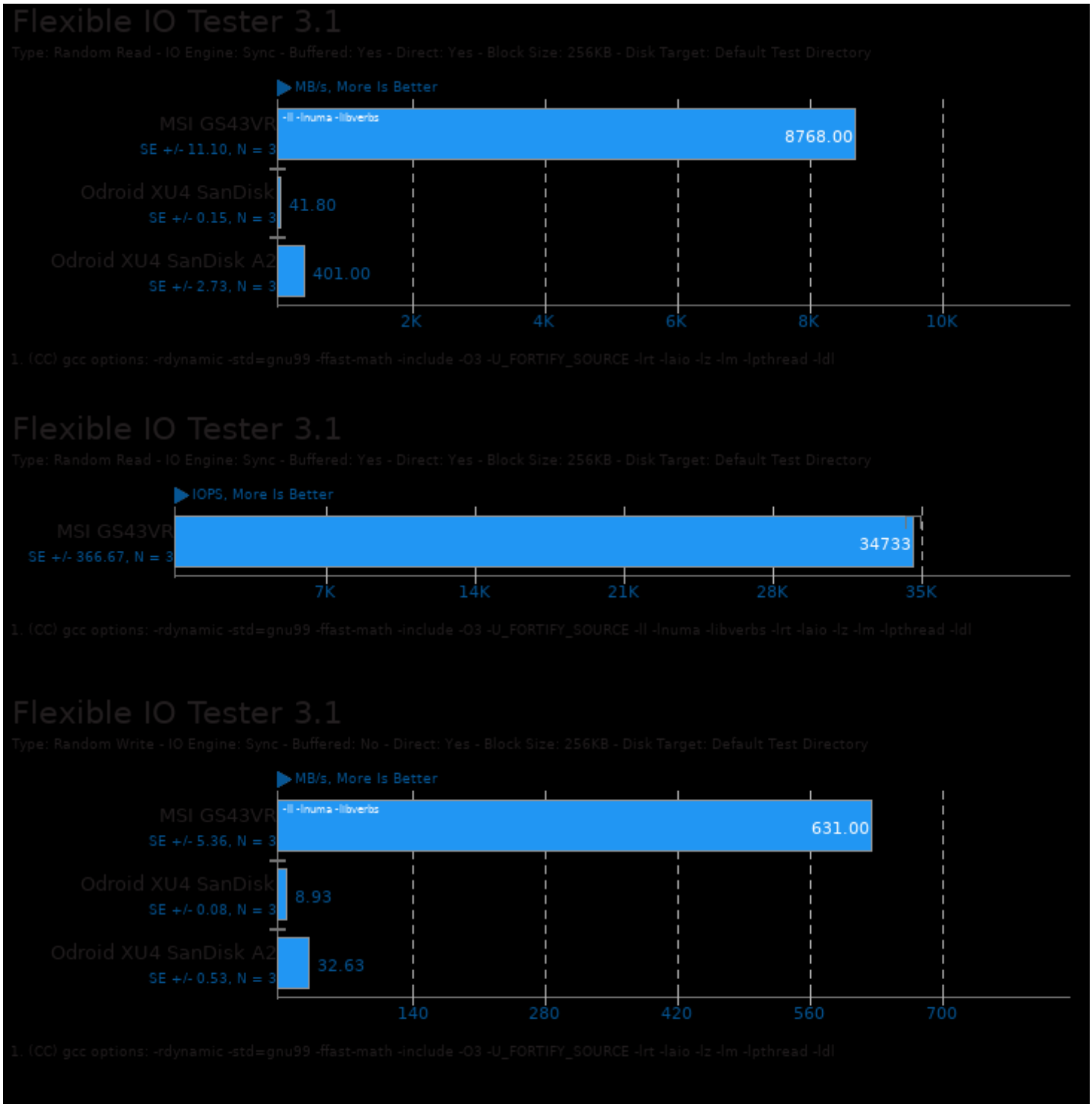
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 185.59, N = 3
25733
6K
12K
18K
24K
30K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 54.46, N = 6
3957.00
Odroid XU4 SanDisk
SE +/- 0.76, N = 12
7.68
Odroid XU4 SanDisk A2
SE +/- 0.95, N = 12
12.57
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 3458.48, N = 6
253167
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

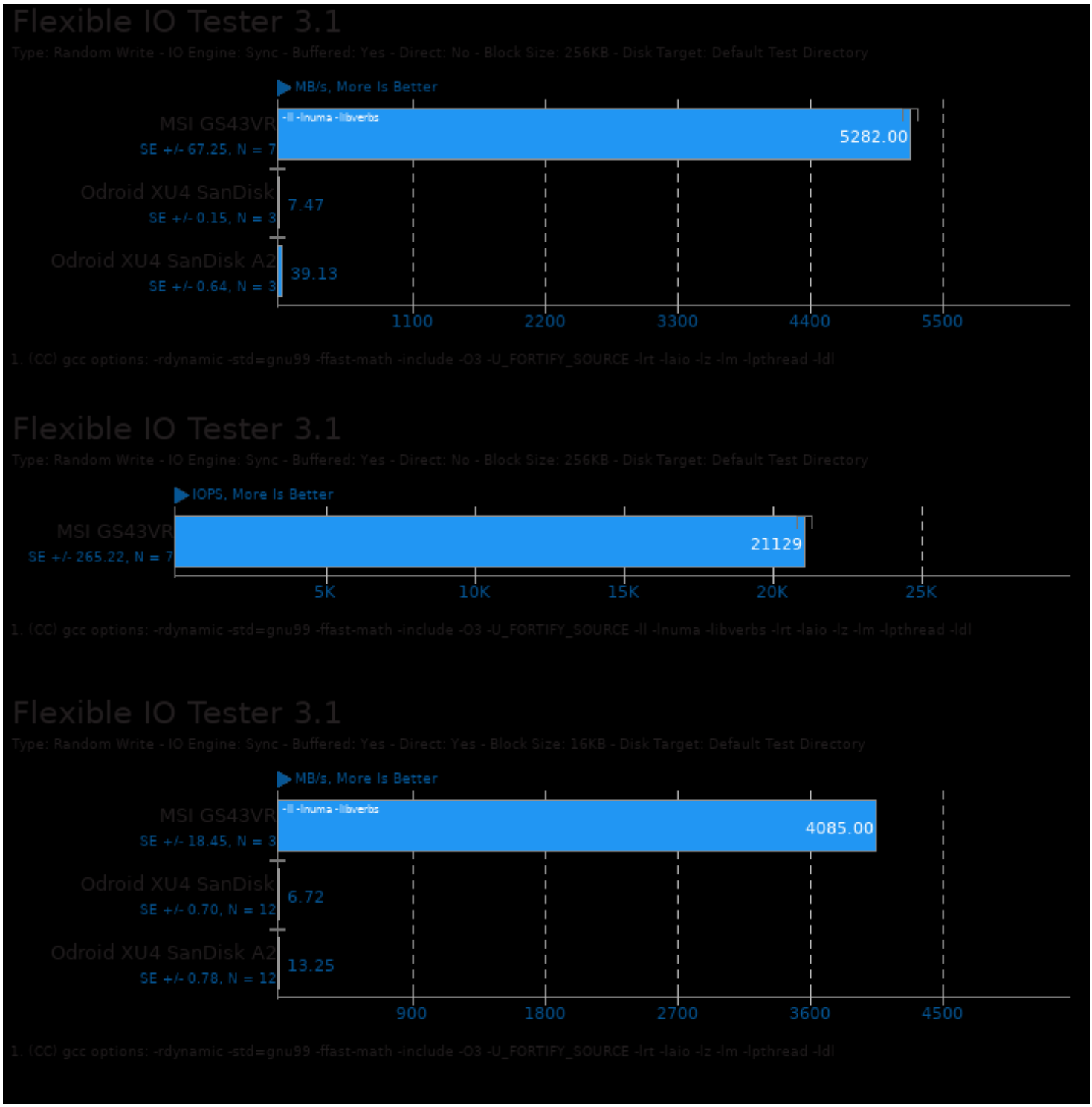
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 6.81, N = 3
-ll -lnuma -libverbs
2457.00
Odroid XU4 SanDisk
SE +/- 0.21, N = 12
5.06
Odroid XU4 SanDisk A2
SE +/- 0.27, N = 12
4.61
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1527.53, N = 3
629000
130K
260K
390K
520K
650K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 62.53, N = 12
-ll -lnuma -libverbs
3787.00
Odroid XU4 SanDisk
SE +/- 0.48, N = 12
9.39
Odroid XU4 SanDisk A2
SE +/- 4.57, N = 9
49.63
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

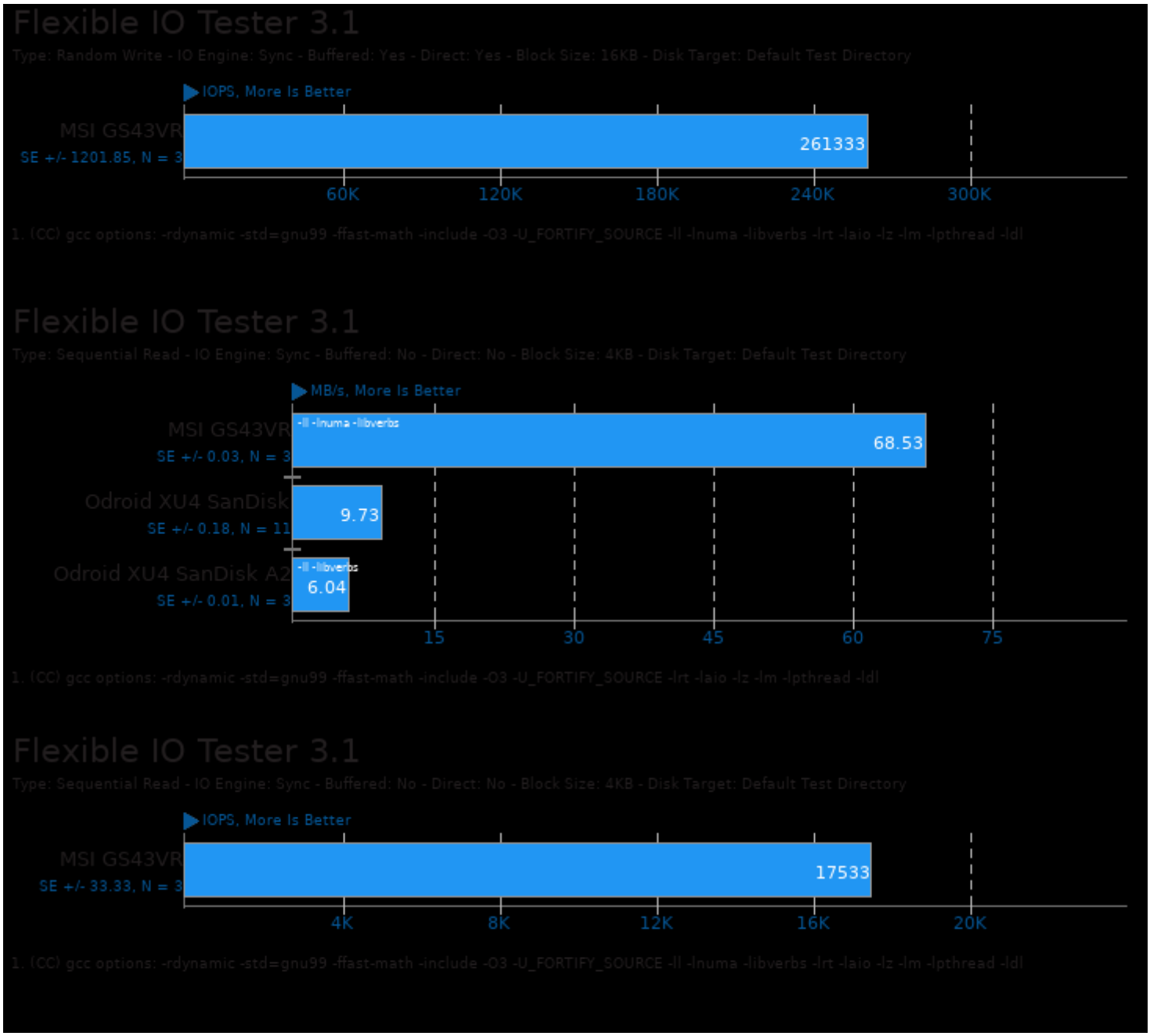
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 11.10, N = 3
-ll -lnuma -libverbs
8768.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 3
41.80
Odroid XU4 SanDisk A2
SE +/- 2.73, N = 3
401.00
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 366.67, N = 3
34733
7K
14K
21K
28K
35K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 5.36, N = 3
-ll -lnuma -libverbs
631.00
Odroid XU4 SanDisk
SE +/- 0.08, N = 3
8.93
Odroid XU4 SanDisk A2
SE +/- 0.53, N = 3
32.63
140
280
420
560
700
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

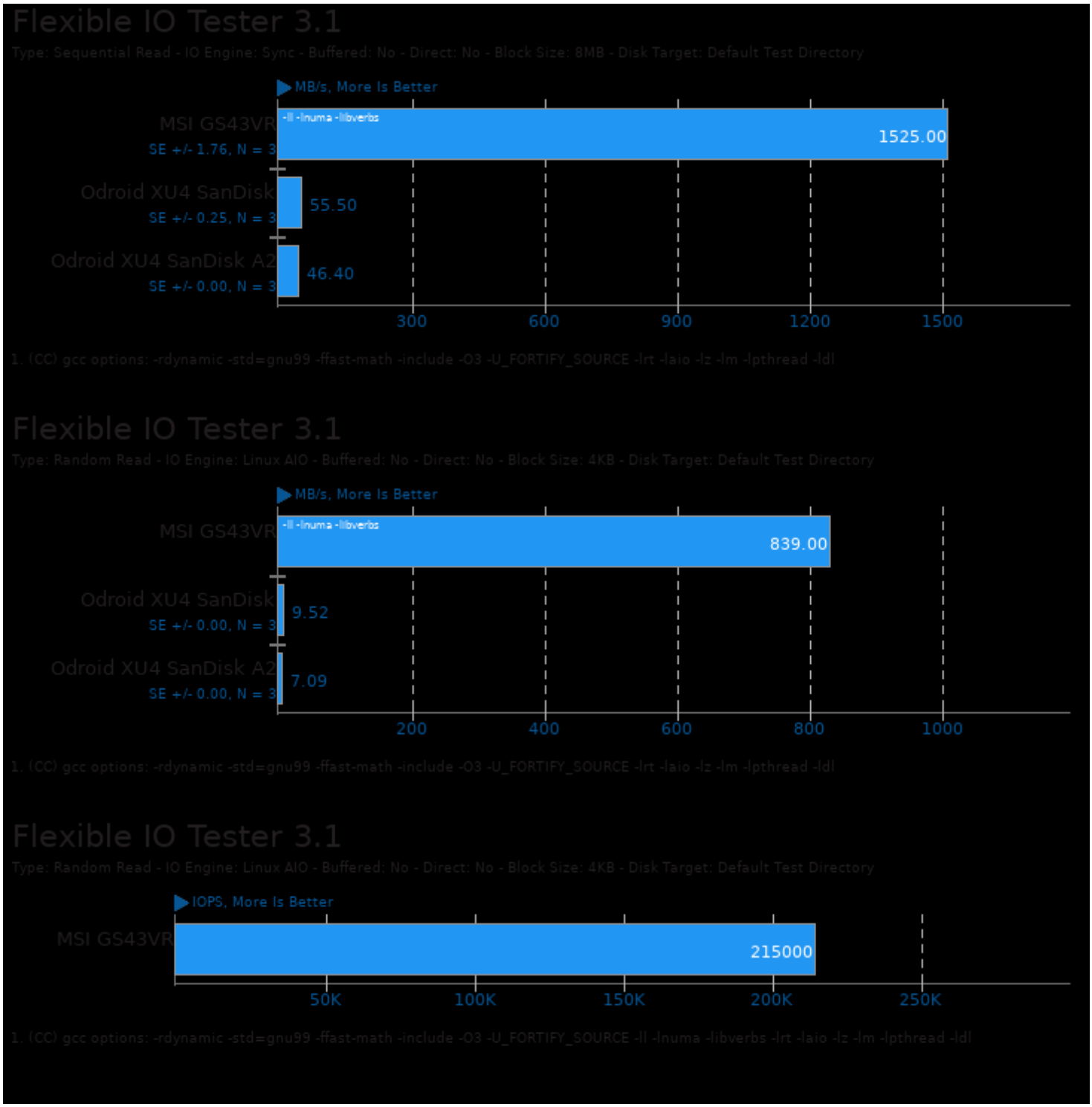
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 67.25, N = 7
-ll -lnuma -libverbs
5282.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 3
7.47
Odroid XU4 SanDisk A2
SE +/- 0.64, N = 3
39.13
1100
2200
3300
4400
5500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 265.22, N = 7
21129
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 18.45, N = 3
-ll -lnuma -libverbs
4085.00
Odroid XU4 SanDisk
SE +/- 0.70, N = 12
6.72
Odroid XU4 SanDisk A2
SE +/- 0.78, N = 12
13.25
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

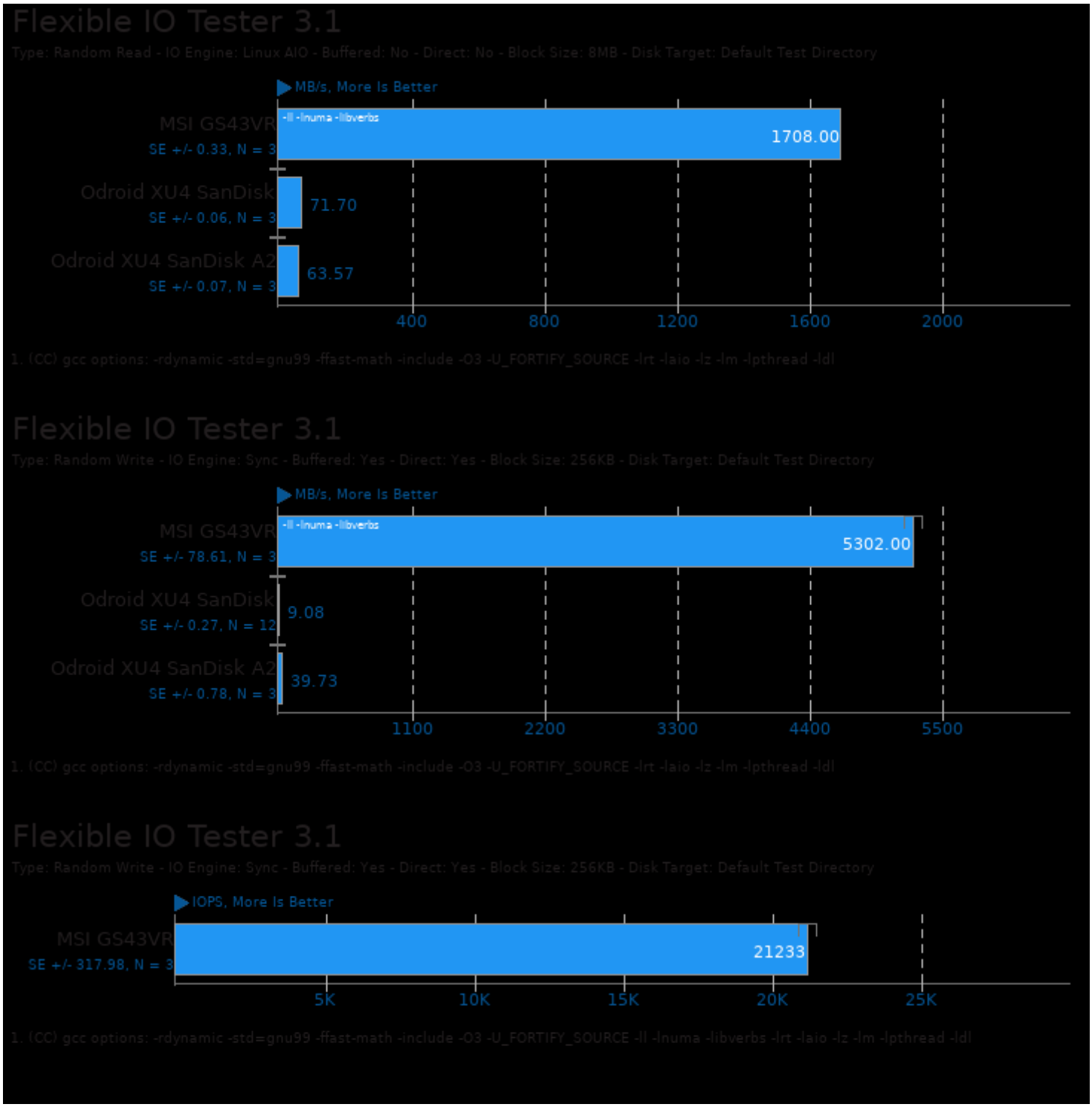
# HD+Crypto

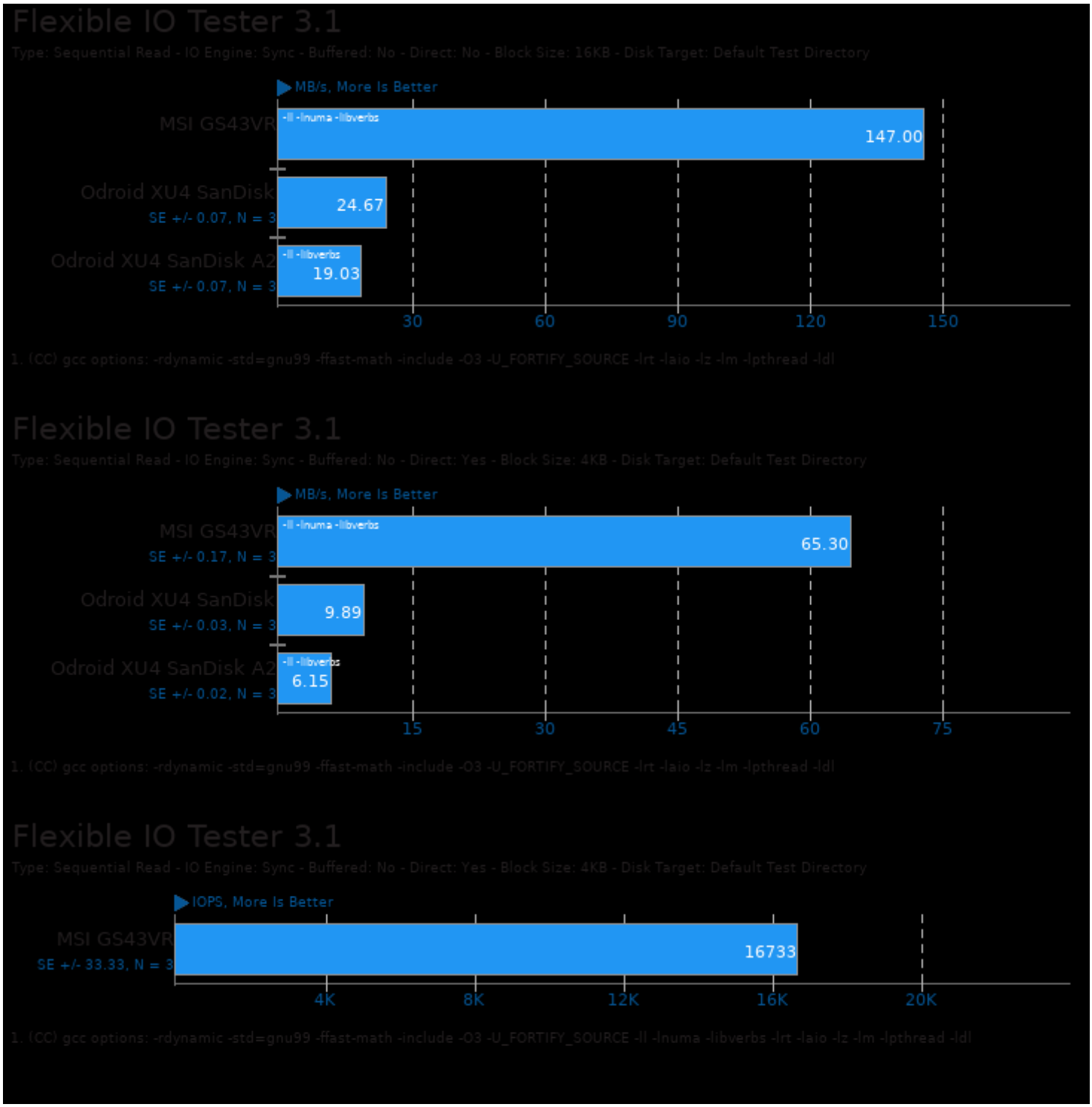

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1201.85, N = 3
261333
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.03, N = 3
-ll -lnuma -libverbs
68.53
Odroid XU4 SanDisk
SE +/- 0.18, N = 11
9.73
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
-ll -libverbs
6.04
15
30
45
60
75
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
17533
4K
8K
12K
16K
20K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

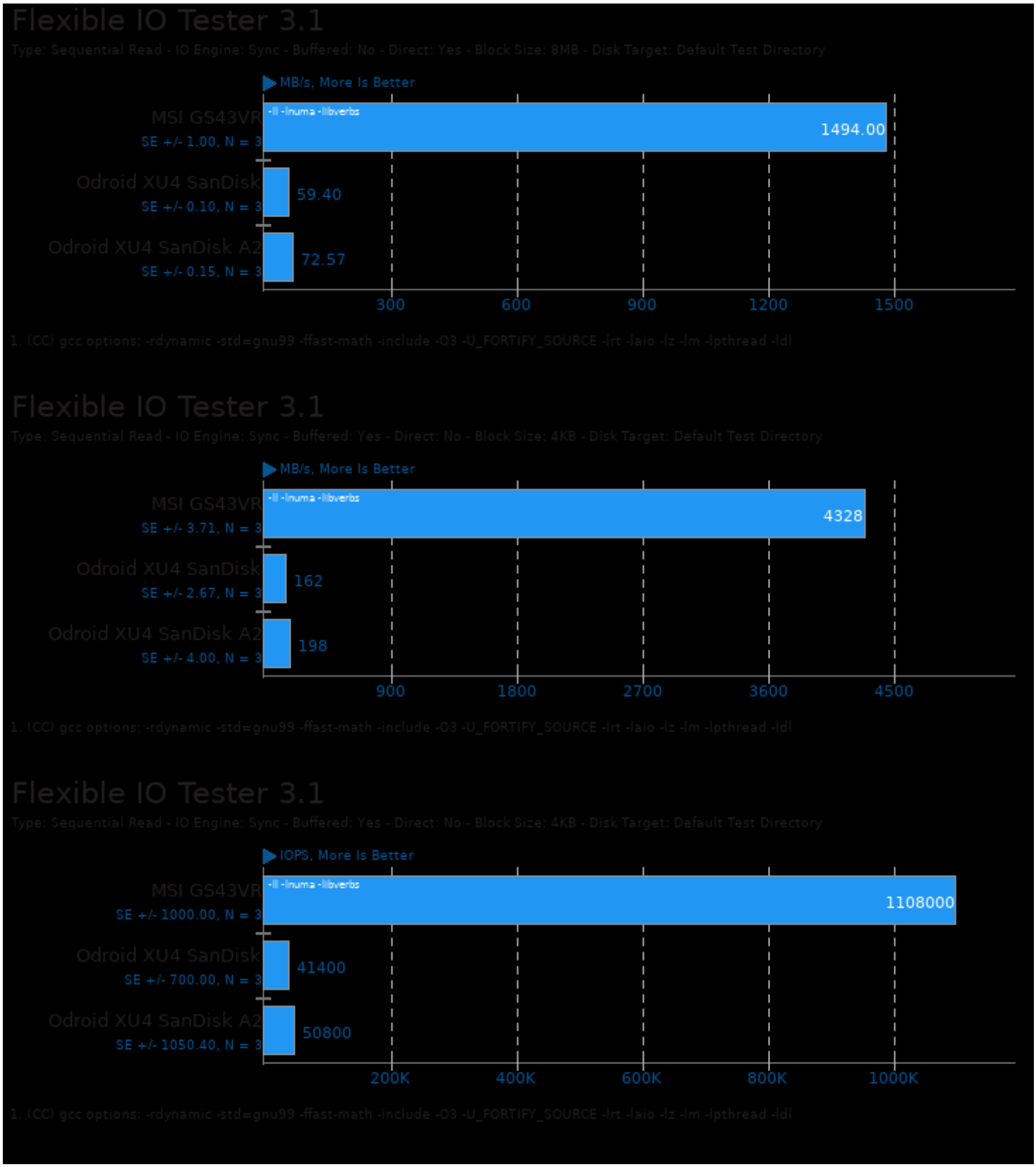

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 1.76, N = 3
1525.00
Odroid XU4 SanDisk
SE +/- 0.25, N = 3
55.50
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
46.40
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
839.00
Odroid XU4 SanDisk
SE +/- 0.00, N = 3
9.52
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
7.09
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
215000
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

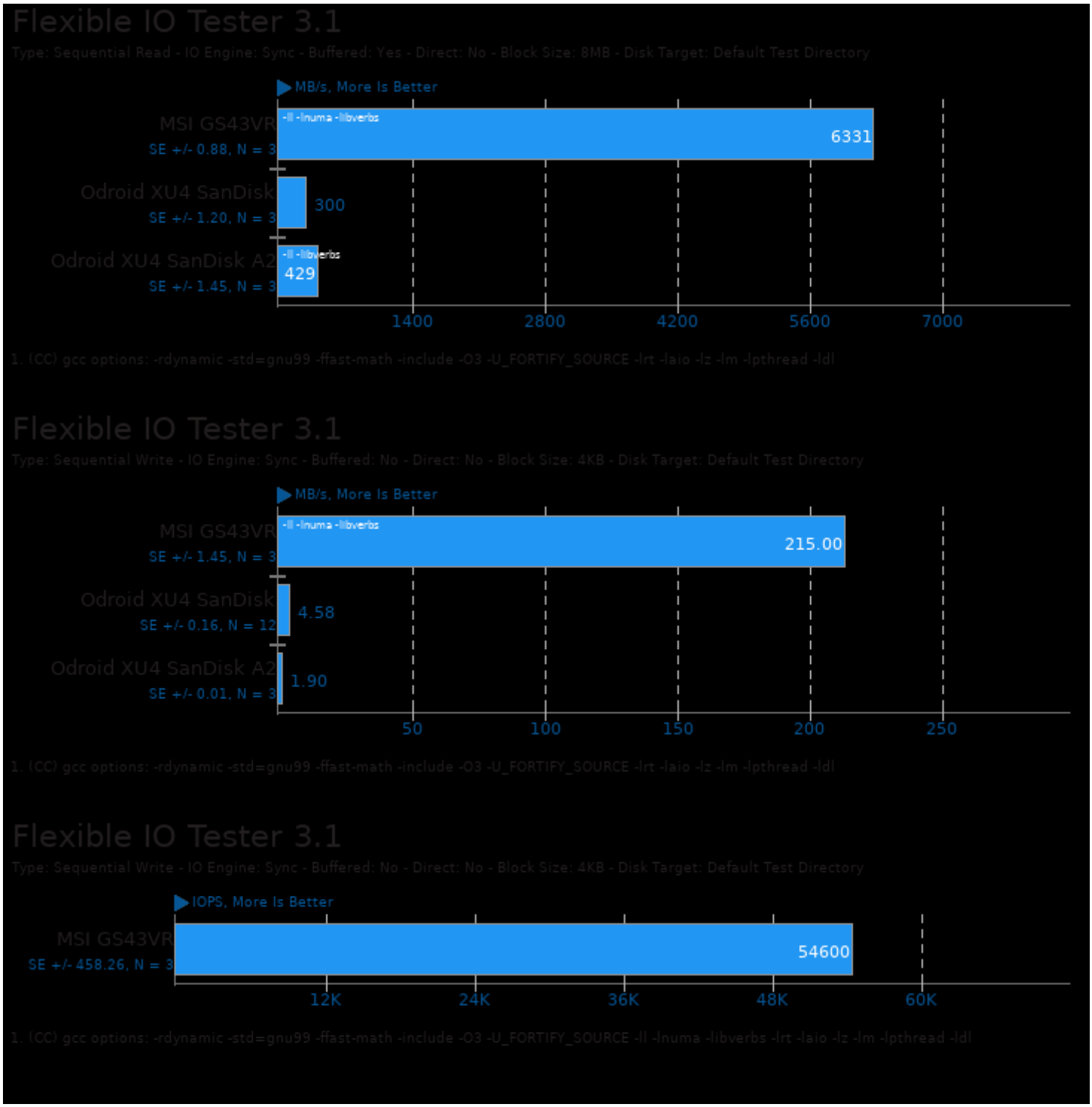

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.33, N = 3
-ll -lnuma -libverbs
1708.00
Odroid XU4 SanDisk
SE +/- 0.06, N = 3
71.70
Odroid XU4 SanDisk A2
SE +/- 0.07, N = 3
63.57
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 78.61, N = 3
-ll -lnuma -libverbs
5302.00
Odroid XU4 SanDisk
SE +/- 0.27, N = 12
9.08
Odroid XU4 SanDisk A2
SE +/- 0.78, N = 3
39.73
1100
2200
3300
4400
5500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 317.98, N = 3
21233
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

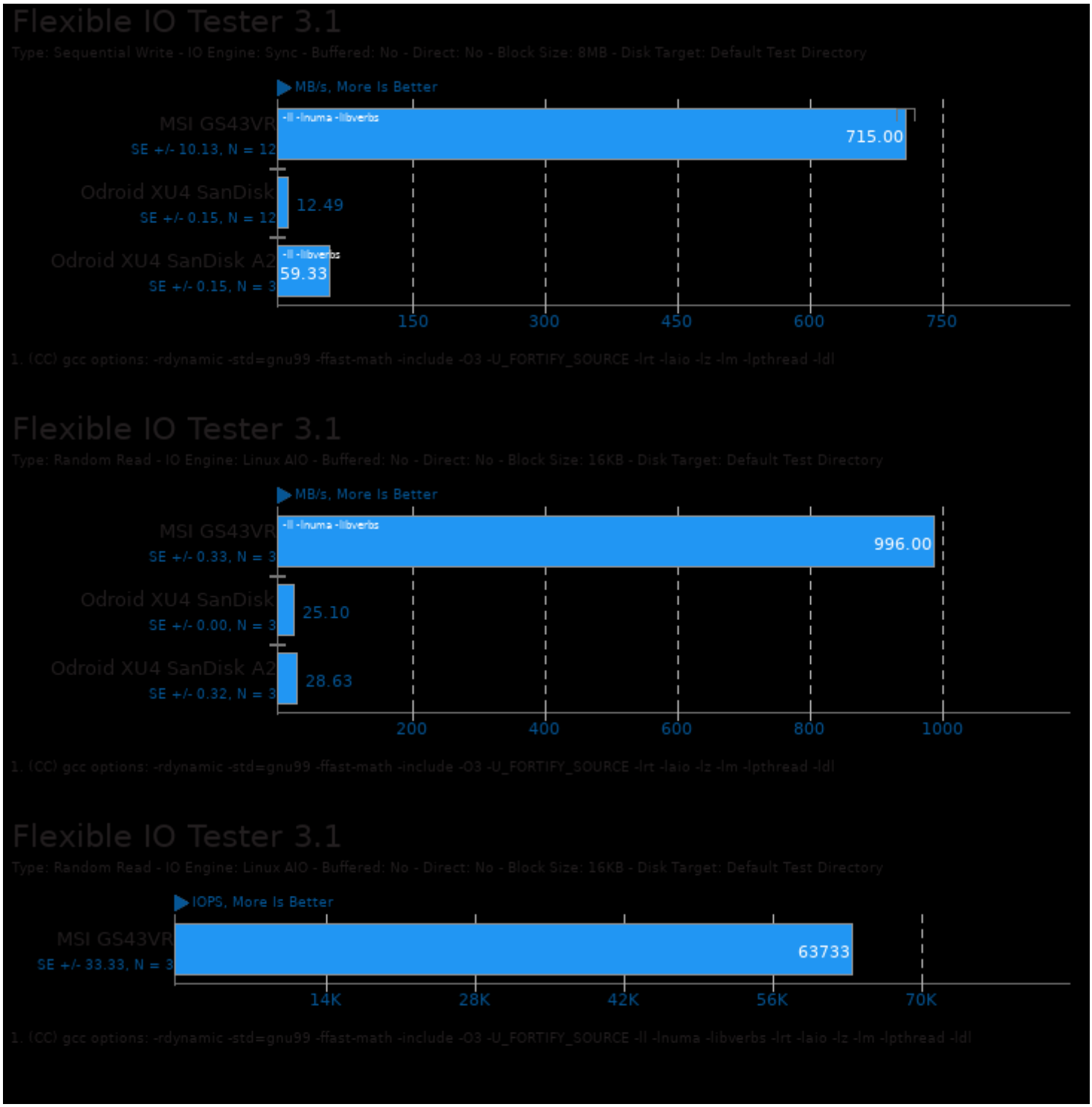

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
147.00
Odroid XU4 SanDisk
SE +/- 0.07, N = 3
24.67
Odroid XU4 SanDisk A2
SE +/- 0.07, N = 3
-ll -libverbs
19.03
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.17, N = 3
-ll -lnuma -libverbs
65.30
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
9.89
Odroid XU4 SanDisk A2
SE +/- 0.02, N = 3
-ll -libverbs
6.15
15
30
45
60
75
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
16733
4K
8K
12K
16K
20K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

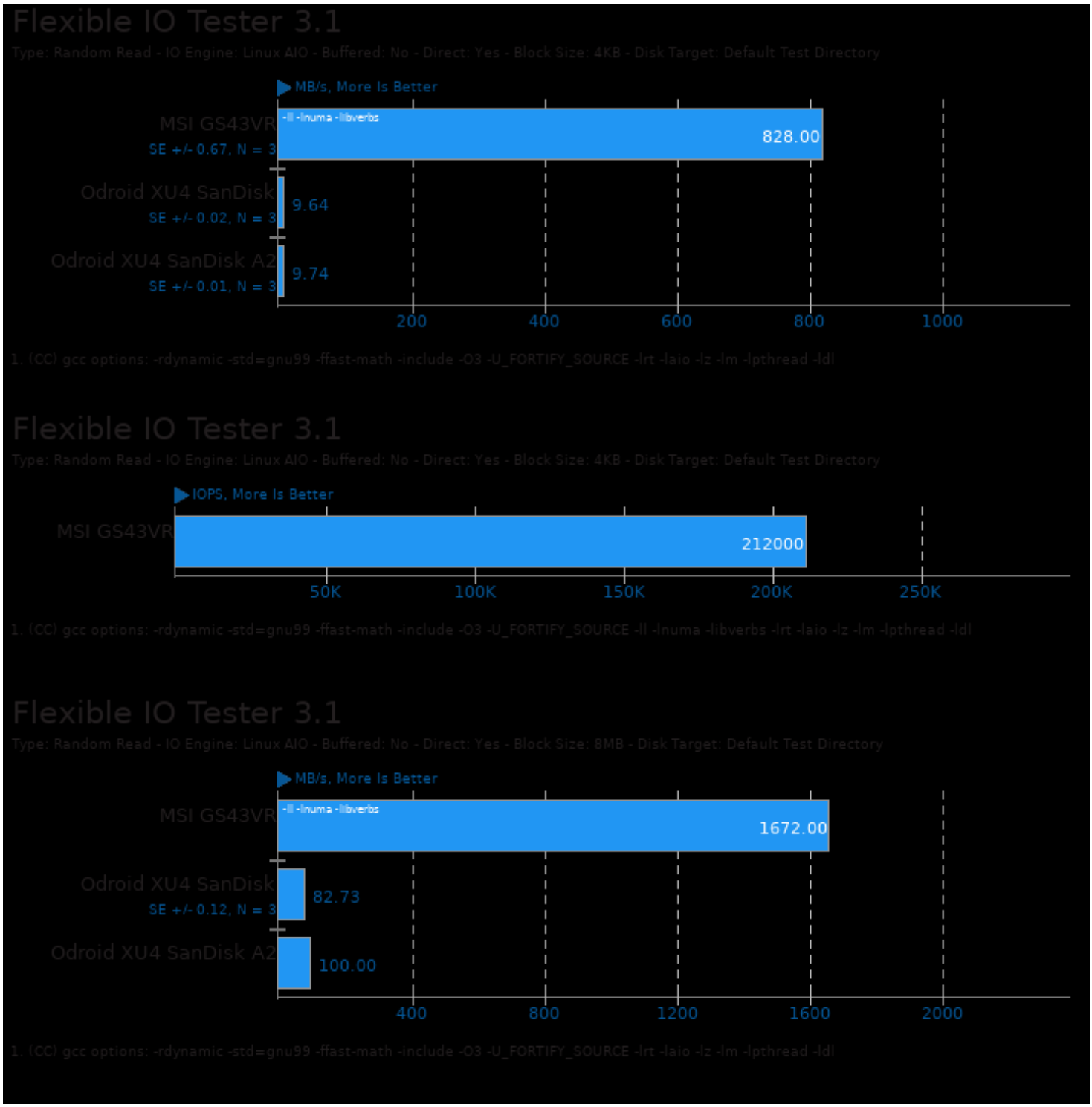

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 1.00, N = 3
-lll -lnuma -libverbs
1494.00
Odroid XU4 SanDisk
SE +/- 0.10, N = 3
59.40
Odroid XU4 SanDisk A2
SE +/- 0.15, N = 3
72.57
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 3.71, N = 3
-lll -lnuma -libverbs
4328
Odroid XU4 SanDisk
SE +/- 2.67, N = 3
162
Odroid XU4 SanDisk A2
SE +/- 4.00, N = 3
198
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1000.00, N = 3
-lll -lnuma -libverbs
1108000
Odroid XU4 SanDisk
SE +/- 700.00, N = 3
41400
Odroid XU4 SanDisk A2
SE +/- 1050.40, N = 3
50800
200K
400K
600K
800K
1000K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

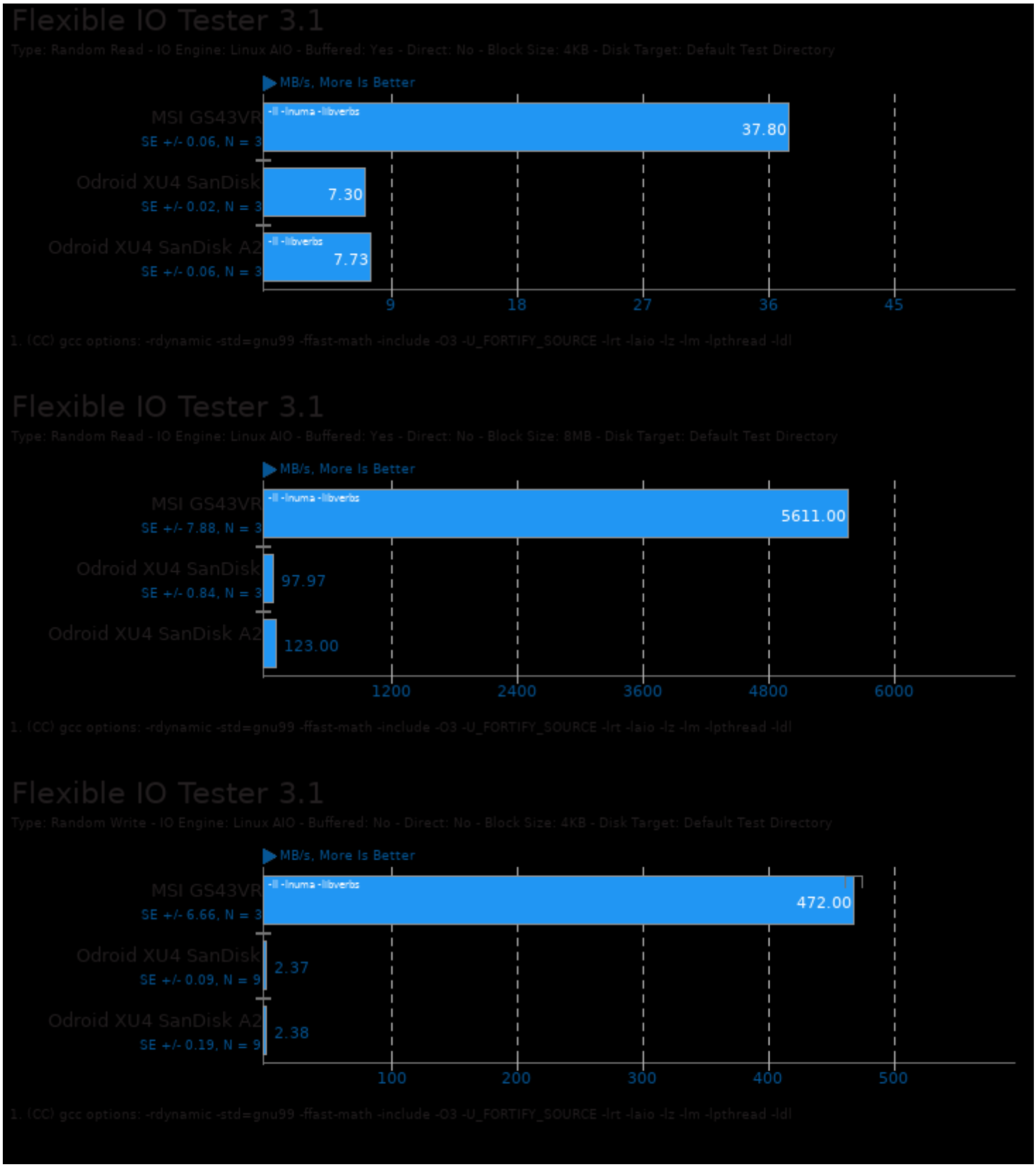
# HD+Crypto

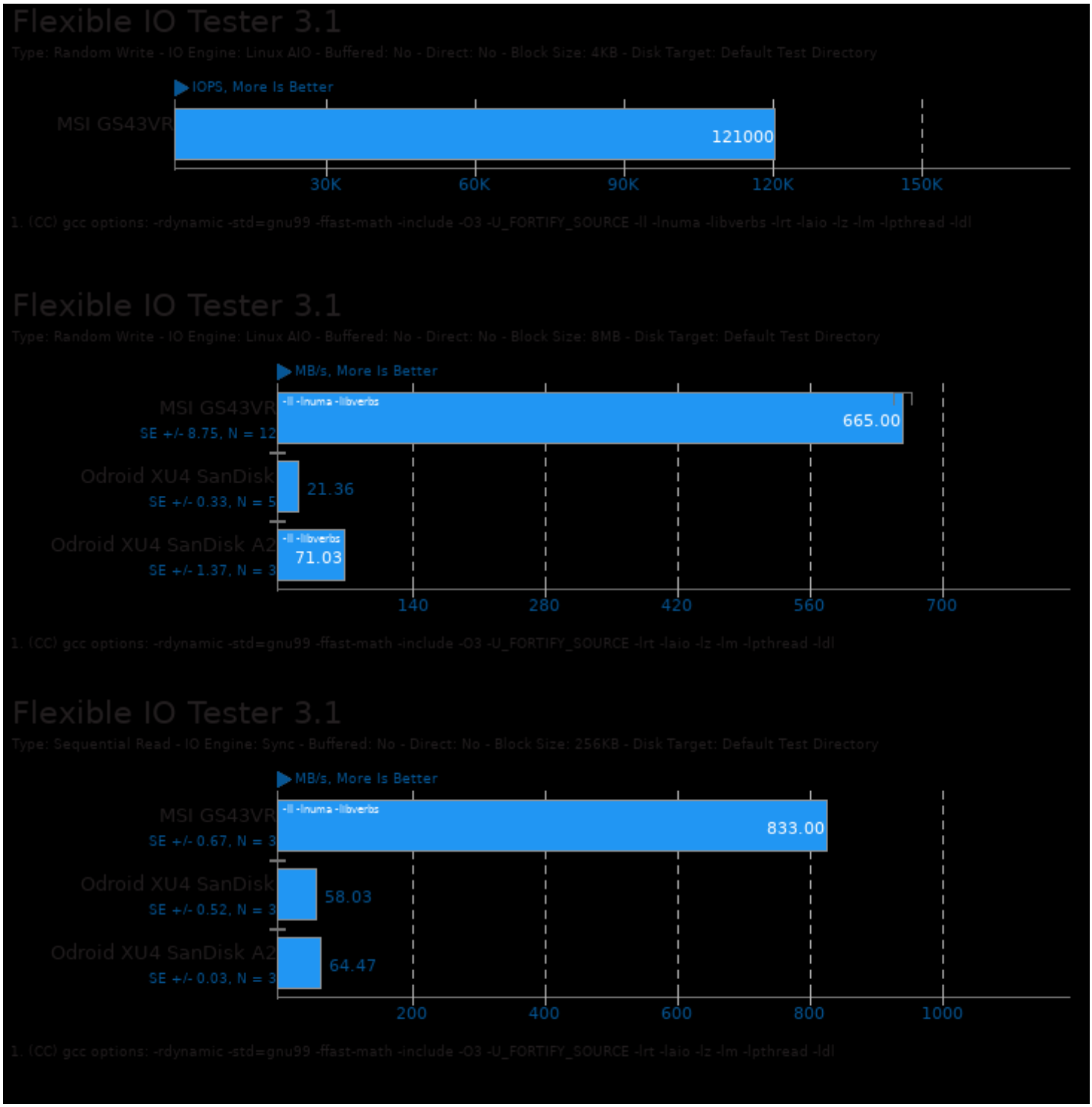

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.88, N = 3
-ll -lnuma -libverbs
6331
Odroid XU4 SanDisk
SE +/- 1.20, N = 3
300
Odroid XU4 SanDisk A2
SE +/- 1.45, N = 3
-ll -libverbs
429
1400
2800
4200
5600
7000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 1.45, N = 3
-ll -lnuma -libverbs
215.00
Odroid XU4 SanDisk
SE +/- 0.16, N = 12
4.58
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
1.90
50
100
150
200
250
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 458.26, N = 3
54600
12K
24K
36K
48K
60K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

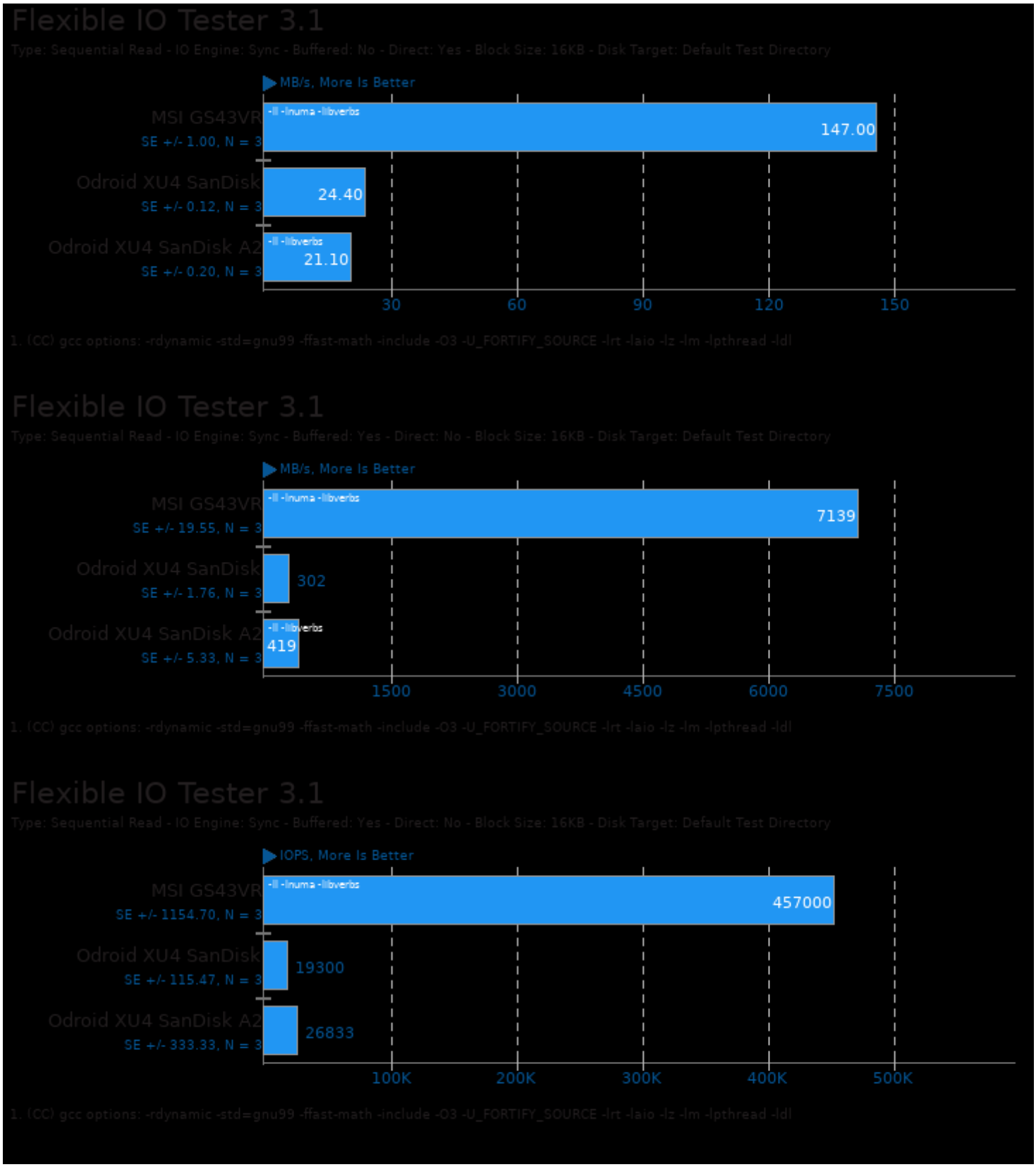

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 10.13, N = 12
-ll -lnuma -libverbs
715.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 12
12.49
Odroid XU4 SanDisk A2
SE +/- 0.15, N = 3
-ll -libverbs
59.33
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.33, N = 3
-ll -lnuma -libverbs
996.00
Odroid XU4 SanDisk
SE +/- 0.00, N = 3
25.10
Odroid XU4 SanDisk A2
SE +/- 0.32, N = 3
28.63
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
63733
14K
28K
42K
56K
70K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

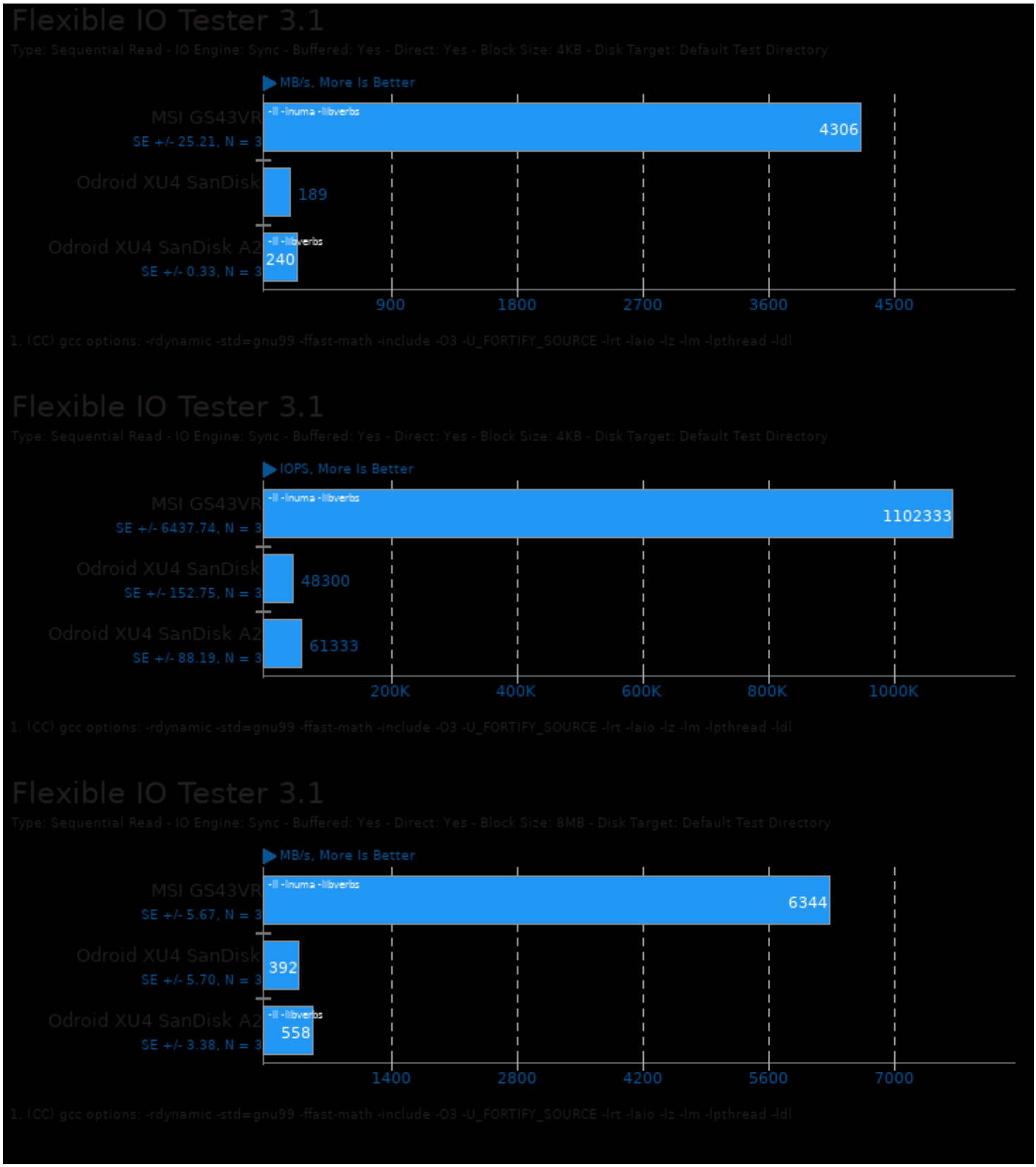
# HD+Crypto


Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
828.00
SE +/- 0.67, N = 3
Odroid XU4 SanDisk
9.64
SE +/- 0.02, N = 3
Odroid XU4 SanDisk A2
9.74
SE +/- 0.01, N = 3
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
212000
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
1672.00
Odroid XU4 SanDisk
82.73
SE +/- 0.12, N = 3
Odroid XU4 SanDisk A2
100.00
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

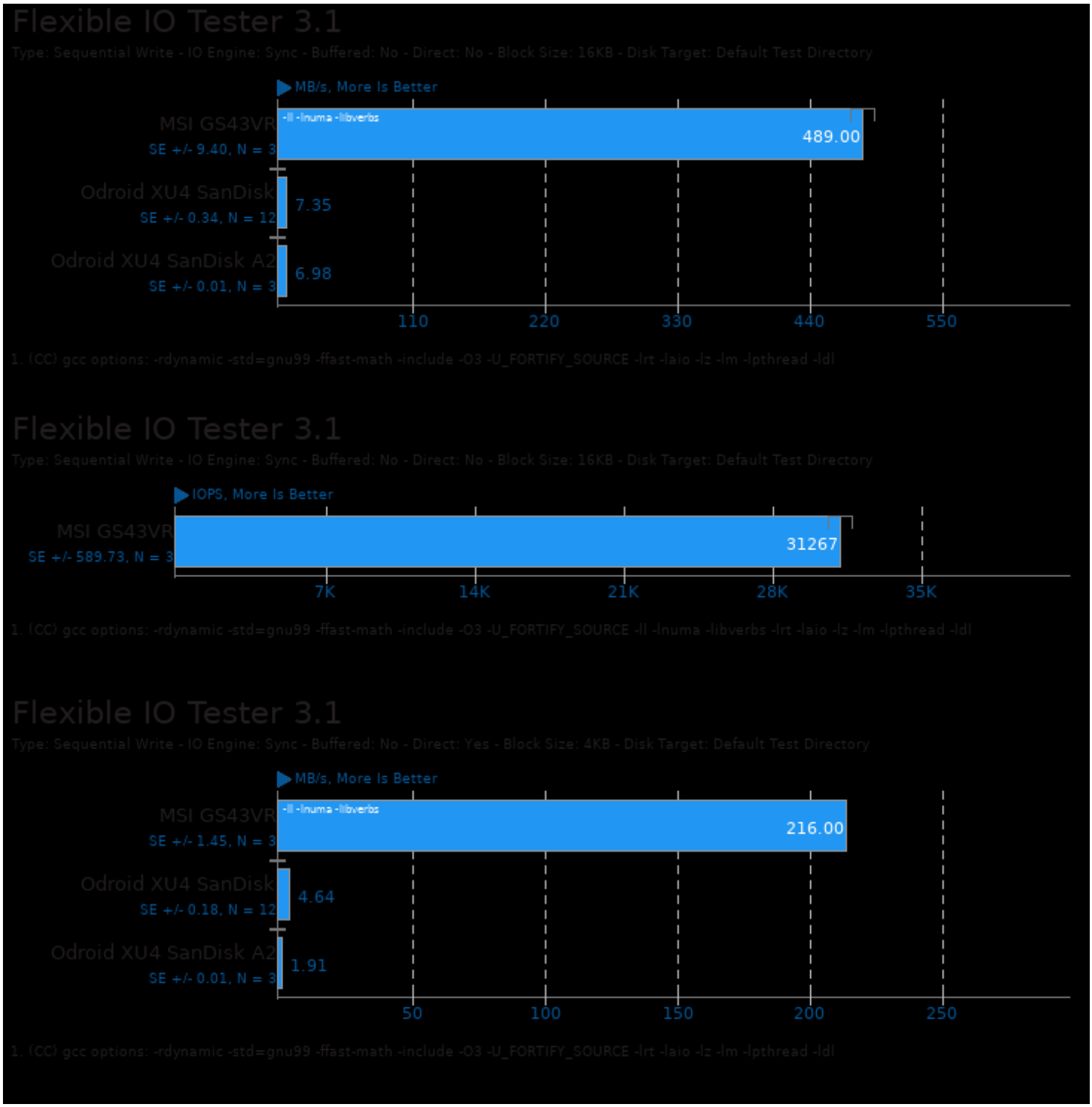

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.06, N = 3
-lll -lnuma -llibverbs
37.80
Odroid XU4 SanDisk
SE +/- 0.02, N = 3
7.30
Odroid XU4 SanDisk A2
SE +/- 0.06, N = 3
-lll -llibverbs
7.73
9
18
27
36
45
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 7.88, N = 3
-lll -lnuma -llibverbs
5611.00
Odroid XU4 SanDisk
SE +/- 0.84, N = 3
97.97
Odroid XU4 SanDisk A2
123.00
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 6.66, N = 3
-lll -lnuma -llibverbs
472.00
Odroid XU4 SanDisk
SE +/- 0.09, N = 9
2.37
Odroid XU4 SanDisk A2
SE +/- 0.19, N = 9
2.38
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
121000
30K
60K
90K
120K
150K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
665.00
SE +/- 8.75, N = 12
Odroid XU4 SanDisk
21.36
SE +/- 0.33, N = 5
Odroid XU4 SanDisk A2
-ll -libverbs
71.03
SE +/- 1.37, N = 3
140
280
420
560
700
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
833.00
SE +/- 0.67, N = 3
Odroid XU4 SanDisk
58.03
SE +/- 0.52, N = 3
Odroid XU4 SanDisk A2
64.47
SE +/- 0.03, N = 3
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

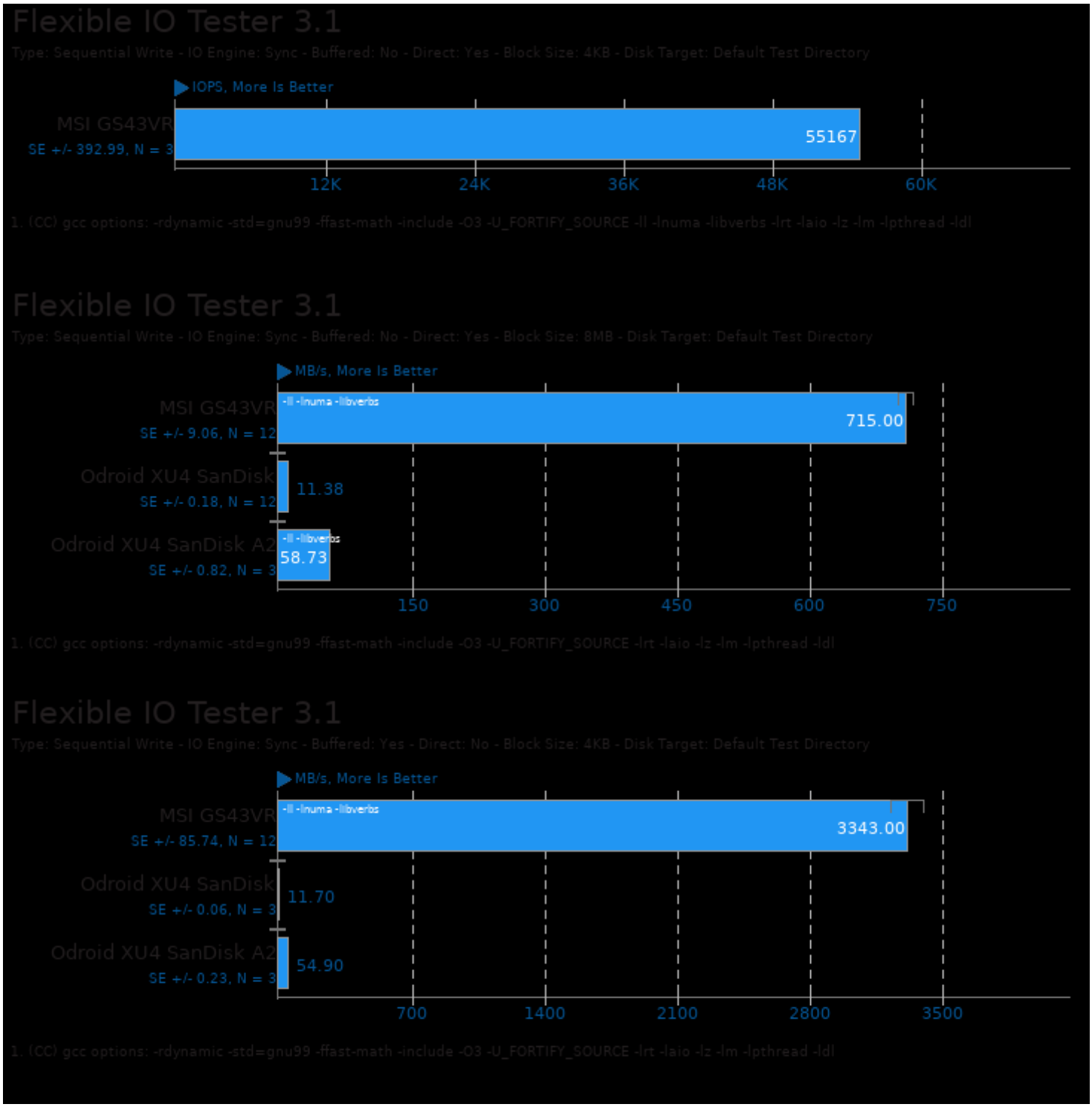

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 1.00, N = 3
-ll -lnuma -libverbs
147.00
Odroid XU4 SanDisk
SE +/- 0.12, N = 3
24.40
Odroid XU4 SanDisk A2
SE +/- 0.20, N = 3
-ll -libverbs
21.10
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 19.55, N = 3
-ll -lnuma -libverbs
7139
Odroid XU4 SanDisk
SE +/- 1.76, N = 3
302
Odroid XU4 SanDisk A2
SE +/- 5.33, N = 3
-ll -libverbs
419
1500
3000
4500
6000
7500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1154.70, N = 3
-ll -lnuma -libverbs
457000
Odroid XU4 SanDisk
SE +/- 115.47, N = 3
19300
Odroid XU4 SanDisk A2
SE +/- 333.33, N = 3
26833
100K
200K
300K
400K
500K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 25.21, N = 3
-lll -lnuma -llibverbs
4306
Odroid XU4 SanDisk
189
Odroid XU4 SanDisk A2
SE +/- 0.33, N = 3
-lll -llibverbs
240
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 6437.74, N = 3
-lll -lnuma -llibverbs
1102333
Odroid XU4 SanDisk
SE +/- 152.75, N = 3
48300
Odroid XU4 SanDisk A2
SE +/- 88.19, N = 3
61333
200K
400K
600K
800K
1000K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 5.67, N = 3
-lll -lnuma -llibverbs
6344
Odroid XU4 SanDisk
SE +/- 5.70, N = 3
392
Odroid XU4 SanDisk A2
SE +/- 3.38, N = 3
-lll -llibverbs
558
1400
2800
4200
5600
7000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

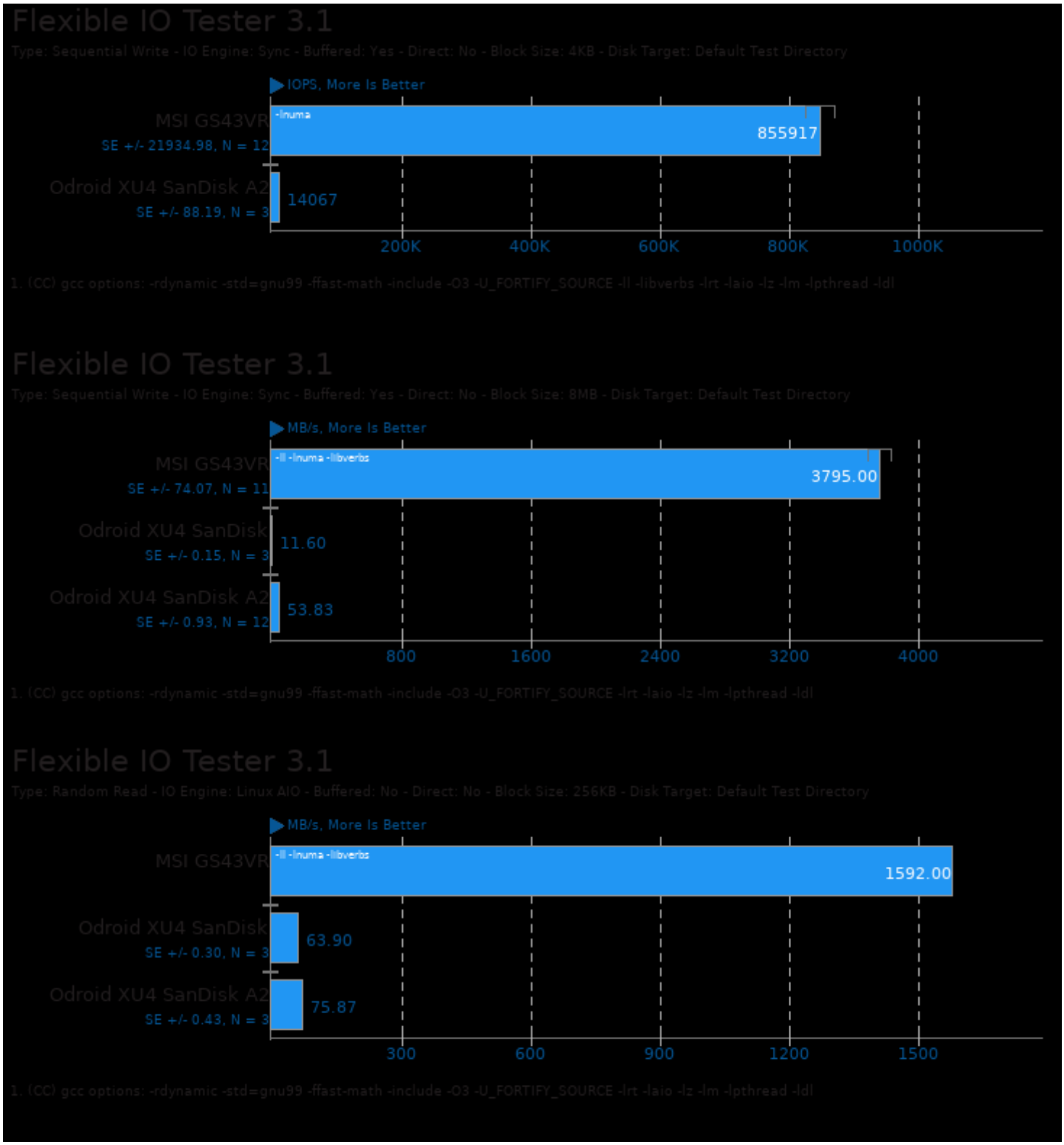
# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 9.40, N = 3
-ll -lnuma -libverbs
489.00
Odroid XU4 SanDisk
SE +/- 0.34, N = 12
7.35
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
6.98
110
220
330
440
550
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 589.73, N = 3
31267
7K
14K
21K
28K
35K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 1.45, N = 3
-ll -lnuma -libverbs
216.00
Odroid XU4 SanDisk
SE +/- 0.18, N = 12
4.64
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
1.91
50
100
150
200
250
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

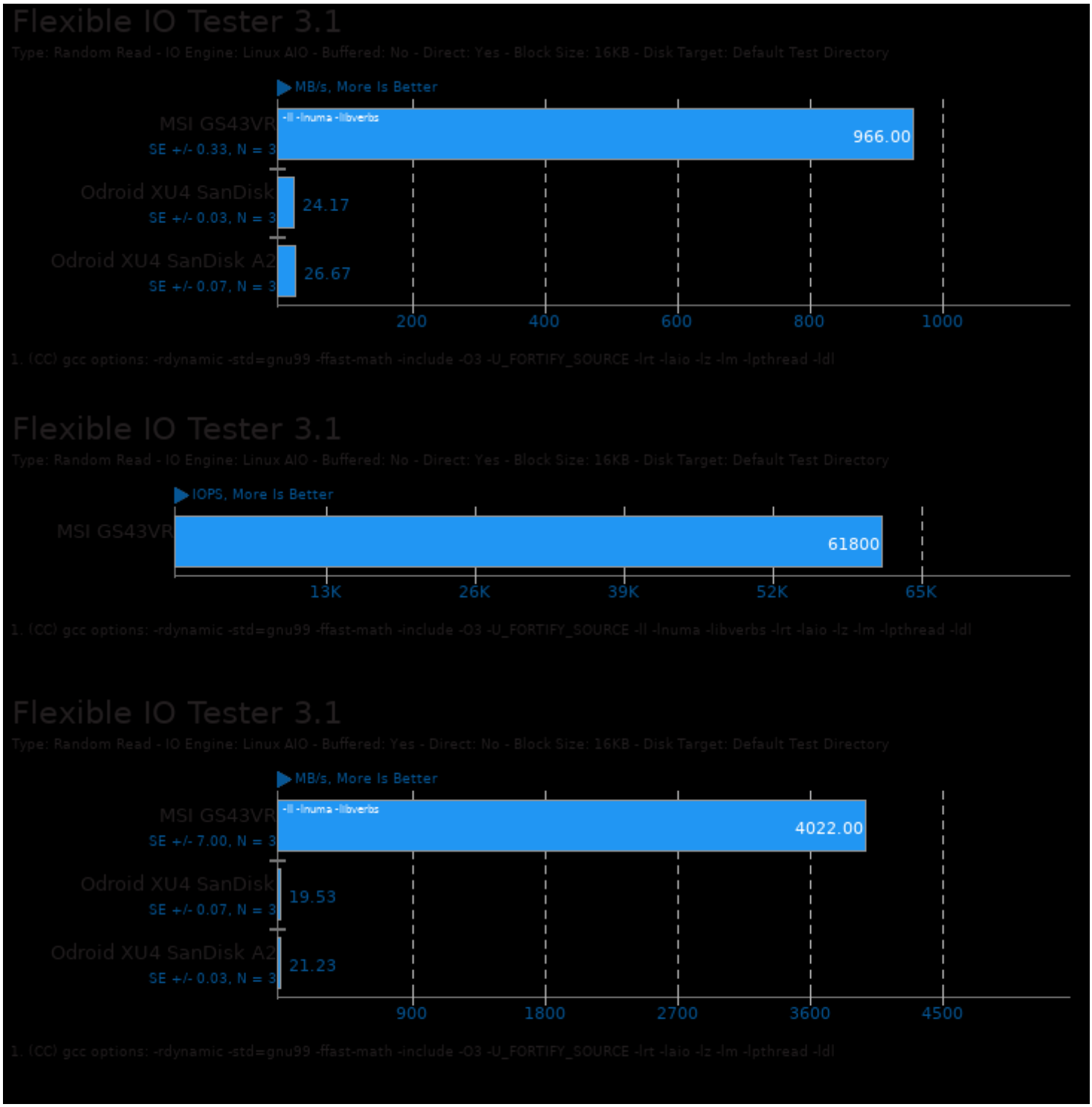
# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 392.99, N = 3
55167
12K
24K
36K
48K
60K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 9.06, N = 12
-ll -lnuma -libverbs
715.00
Odroid XU4 SanDisk
SE +/- 0.18, N = 12
11.38
Odroid XU4 SanDisk A2
SE +/- 0.82, N = 3
-ll -libverbs
58.73
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 85.74, N = 12
-ll -lnuma -libverbs
3343.00
Odroid XU4 SanDisk
SE +/- 0.06, N = 3
11.70
Odroid XU4 SanDisk A2
SE +/- 0.23, N = 3
54.90
700
1400
2100
2800
3500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

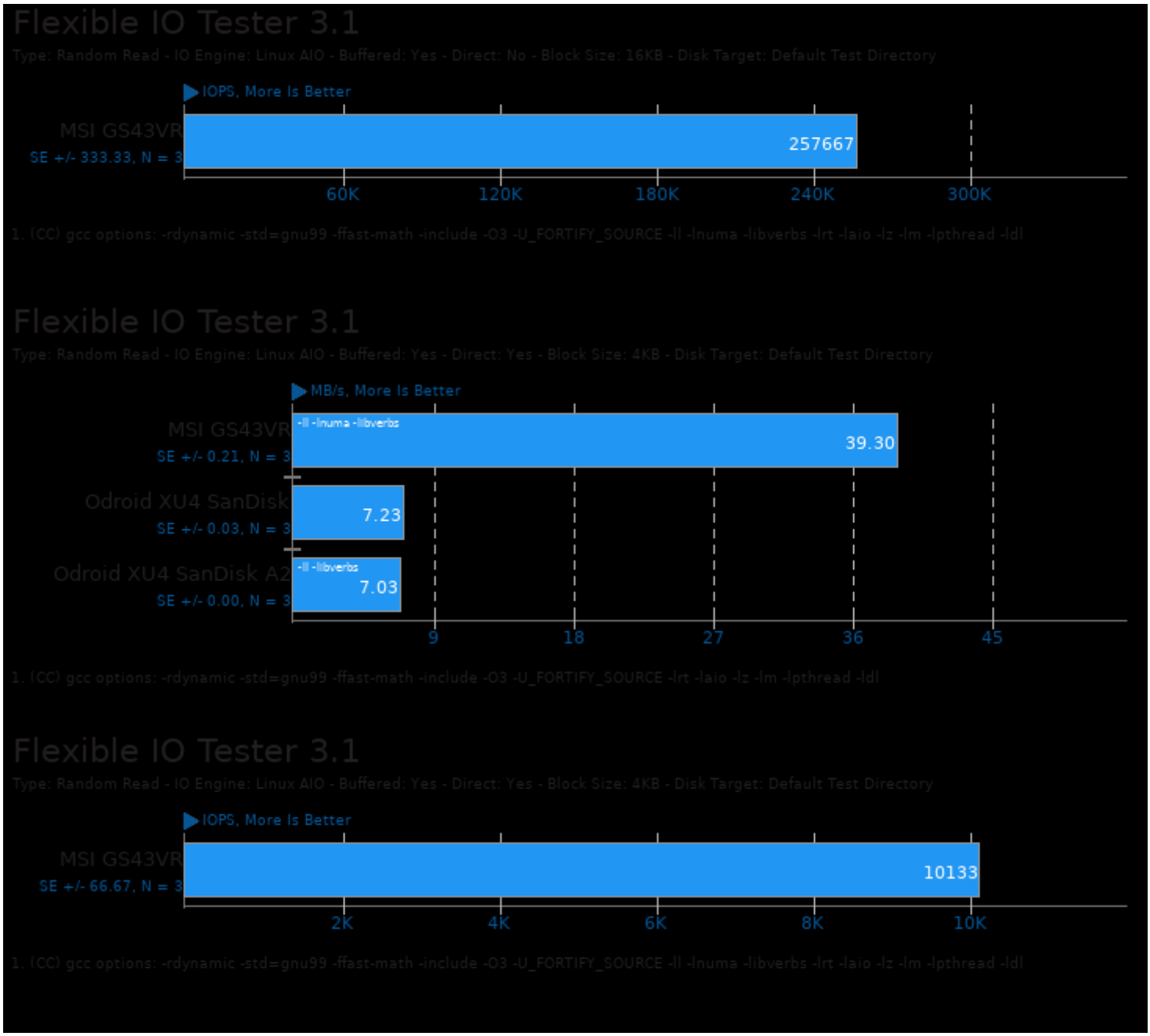
# HD+Crypto

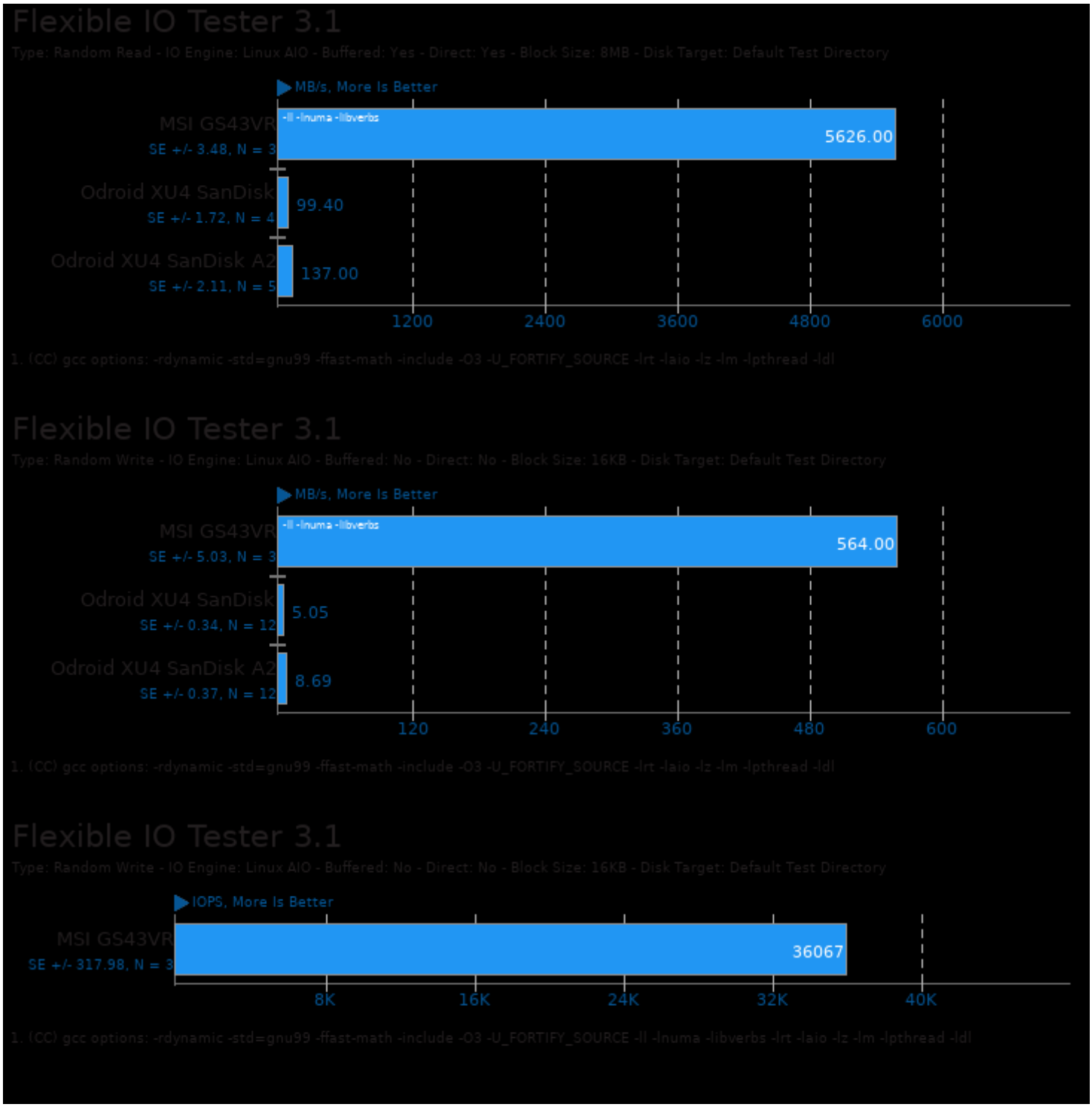

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 21934.98, N = 12
-lnuma
855917
Odroid XU4 SanDisk A2
SE +/- 88.19, N = 3
14067
200K
400K
600K
800K
1000K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 74.07, N = 11
-ll -lnuma -libverbs
3795.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 3
11.60
Odroid XU4 SanDisk A2
SE +/- 0.93, N = 12
53.83
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
1592.00
Odroid XU4 SanDisk
SE +/- 0.30, N = 3
63.90
Odroid XU4 SanDisk A2
SE +/- 0.43, N = 3
75.87
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

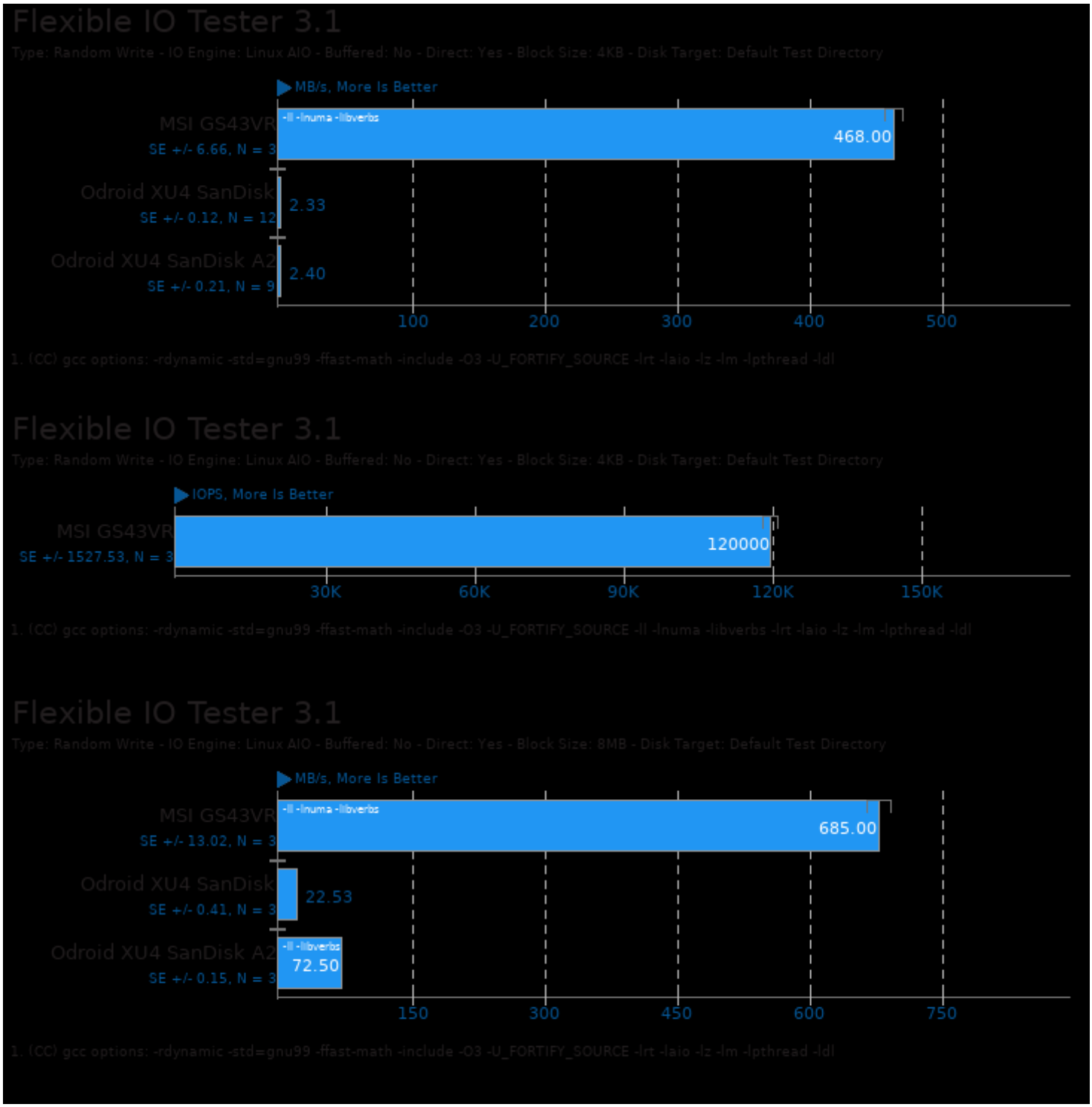

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 0.33, N = 3
966.00
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
24.17
Odroid XU4 SanDisk A2
SE +/- 0.07, N = 3
26.67
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
61800
13K
26K
39K
52K
65K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 7.00, N = 3
4022.00
Odroid XU4 SanDisk
SE +/- 0.07, N = 3
19.53
Odroid XU4 SanDisk A2
SE +/- 0.03, N = 3
21.23
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

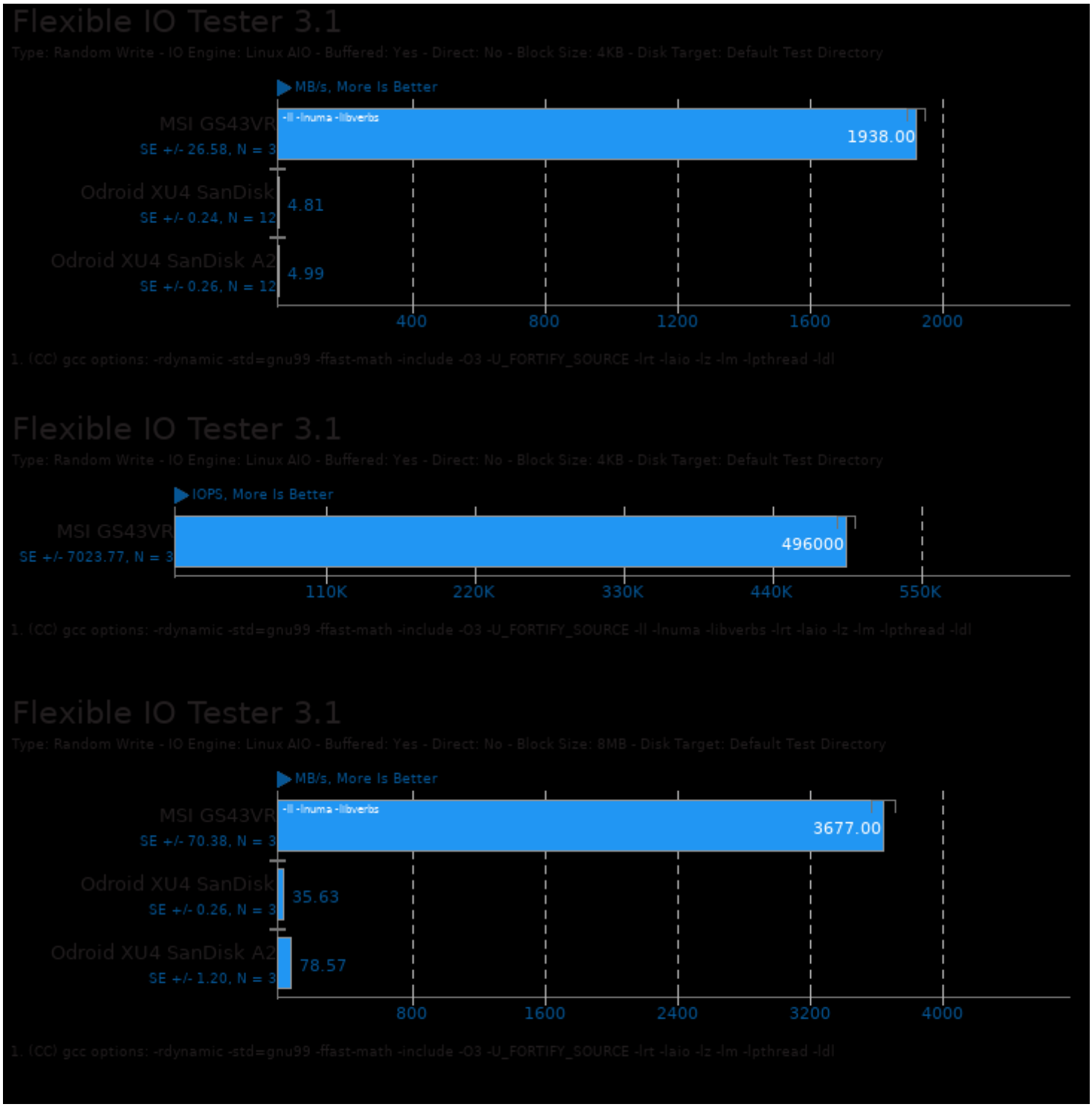

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 333.33, N = 3
257667
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -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
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 0.21, N = 3
39.30
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
7.23
Odroid XU4 SanDisk A2
-ll -libverbs
SE +/- 0.00, N = 3
7.03
9
18
27
36
45
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -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
MSI GS43VR
SE +/- 66.67, N = 3
10133
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -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
MSI GS43VR
SE +/- 3.48, N = 3
-ll -lnuma -libverbs
5626.00
Odroid XU4 SanDisk
SE +/- 1.72, N = 4
99.40
Odroid XU4 SanDisk A2
SE +/- 2.11, N = 5
137.00
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 5.03, N = 3
-ll -lnuma -libverbs
564.00
Odroid XU4 SanDisk
SE +/- 0.34, N = 12
5.05
Odroid XU4 SanDisk A2
SE +/- 0.37, N = 12
8.69
120
240
360
480
600
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 317.98, N = 3
36067
8K
16K
24K
32K
40K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

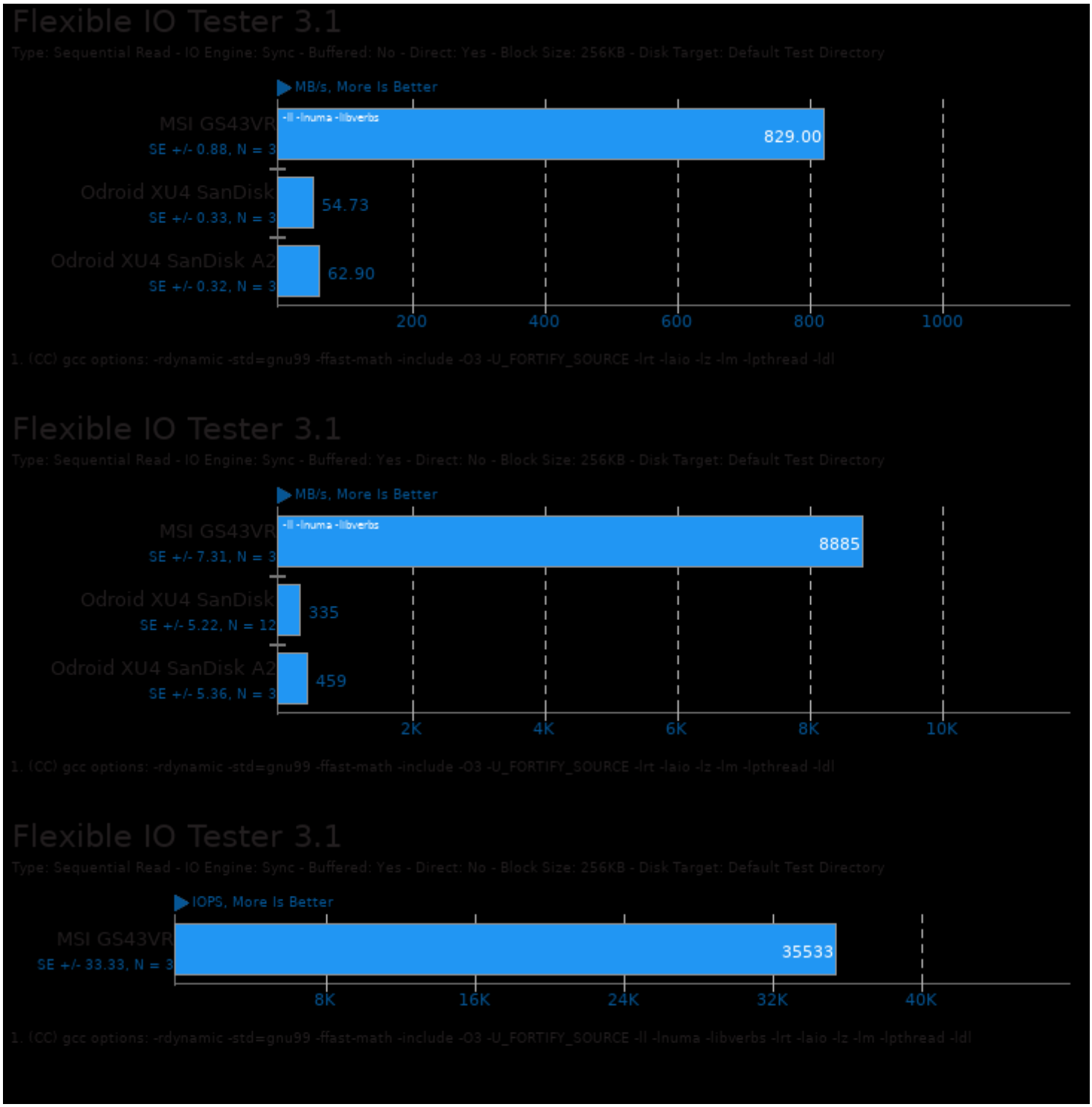
# HD+Crypto

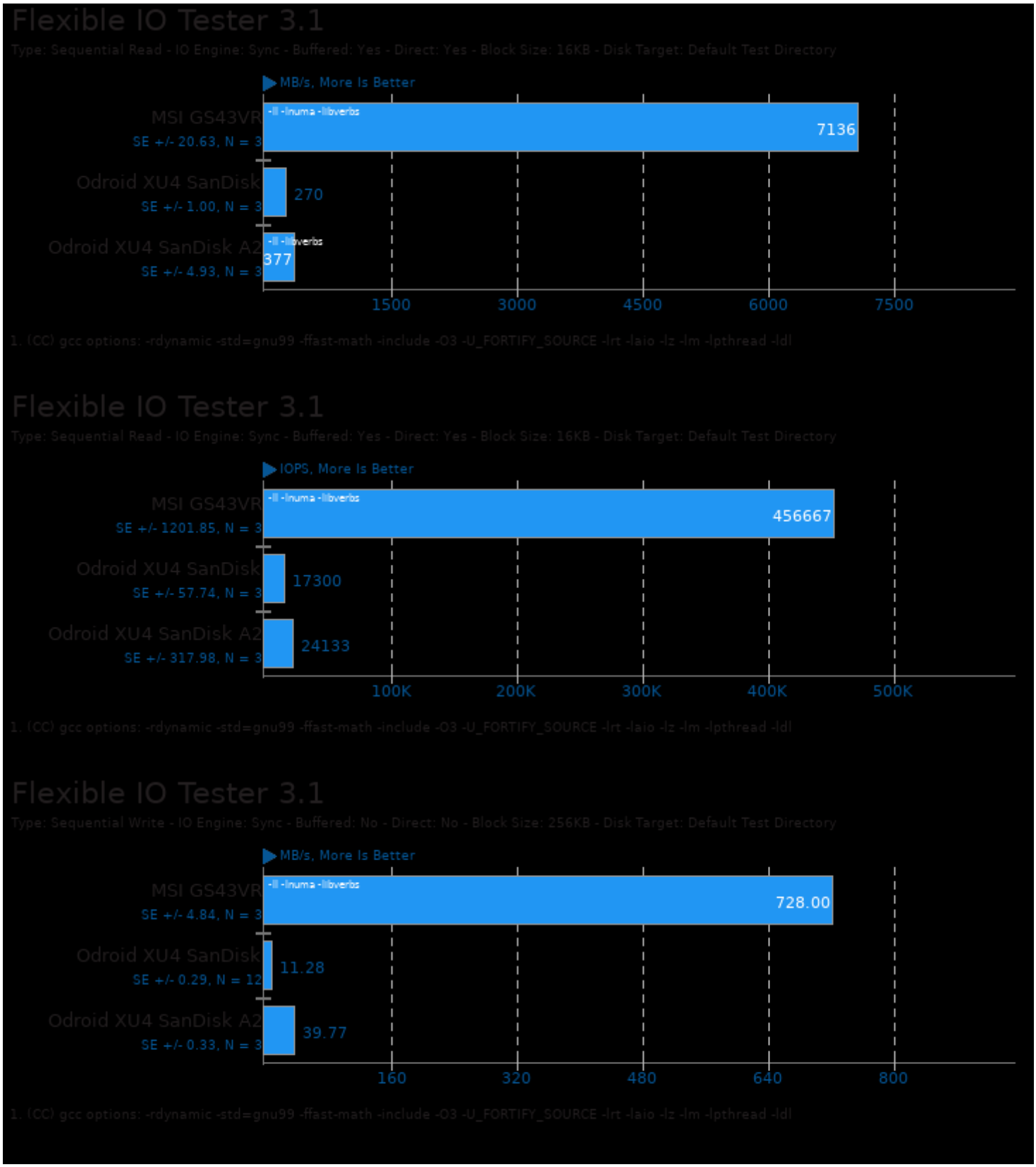

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 6.66, N = 3
-ll -lnuma -libverbs
468.00
Odroid XU4 SanDisk
SE +/- 0.12, N = 12
2.33
Odroid XU4 SanDisk A2
SE +/- 0.21, N = 9
2.40
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1527.53, N = 3
120000
30K
60K
90K
120K
150K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 13.02, N = 3
-ll -lnuma -libverbs
685.00
Odroid XU4 SanDisk
SE +/- 0.41, N = 3
22.53
Odroid XU4 SanDisk A2
SE +/- 0.15, N = 3
-ll -libverbs
72.50
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

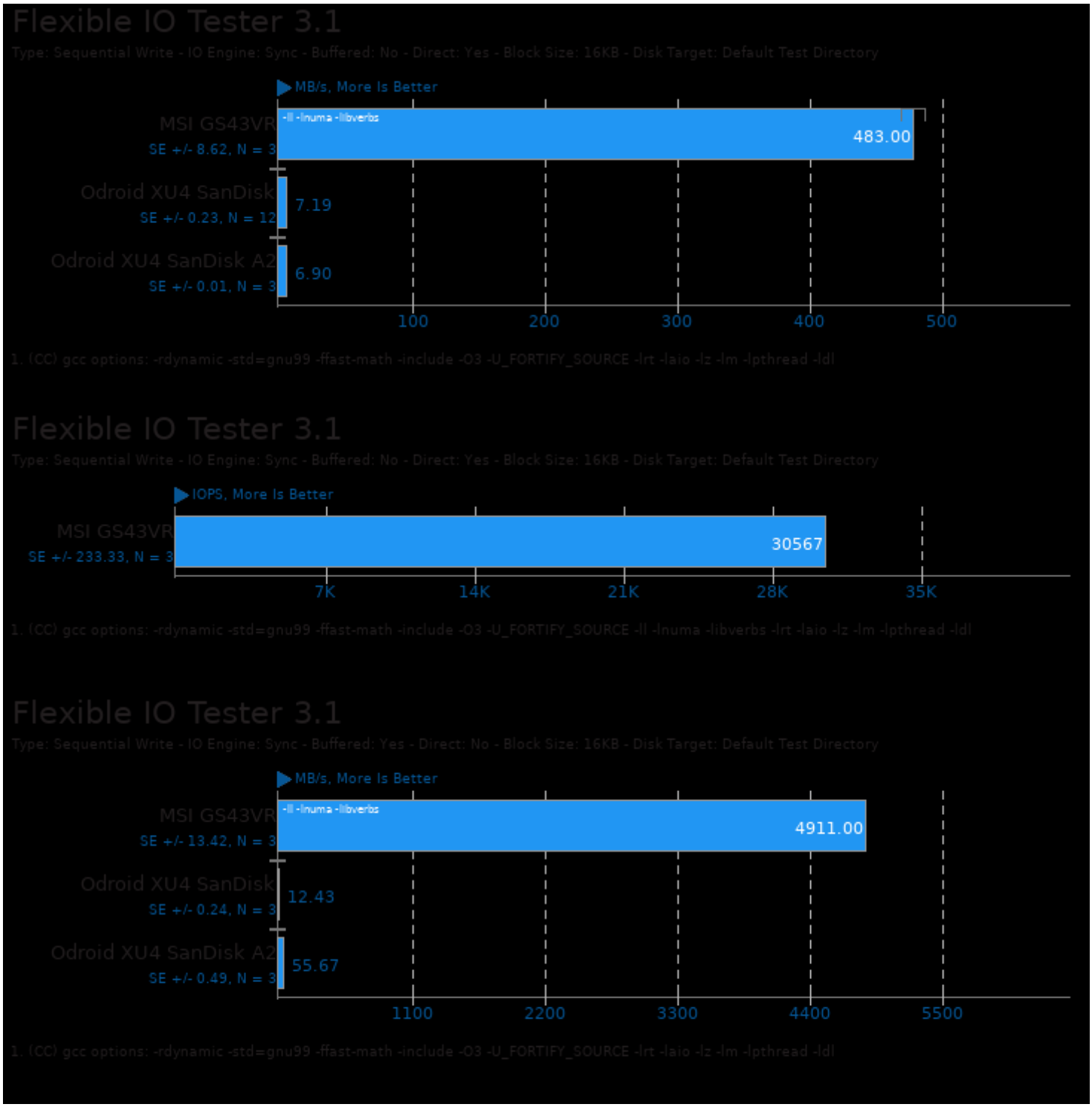

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 26.58, N = 3
-ll -lnuma -libverbs
1938.00
Odroid XU4 SanDisk
SE +/- 0.24, N = 12
4.81
Odroid XU4 SanDisk A2
SE +/- 0.26, N = 12
4.99
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 7023.77, N = 3
496000
110K
220K
330K
440K
550K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 70.38, N = 3
-ll -lnuma -libverbs
3677.00
Odroid XU4 SanDisk
SE +/- 0.26, N = 3
35.63
Odroid XU4 SanDisk A2
SE +/- 1.20, N = 3
78.57
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

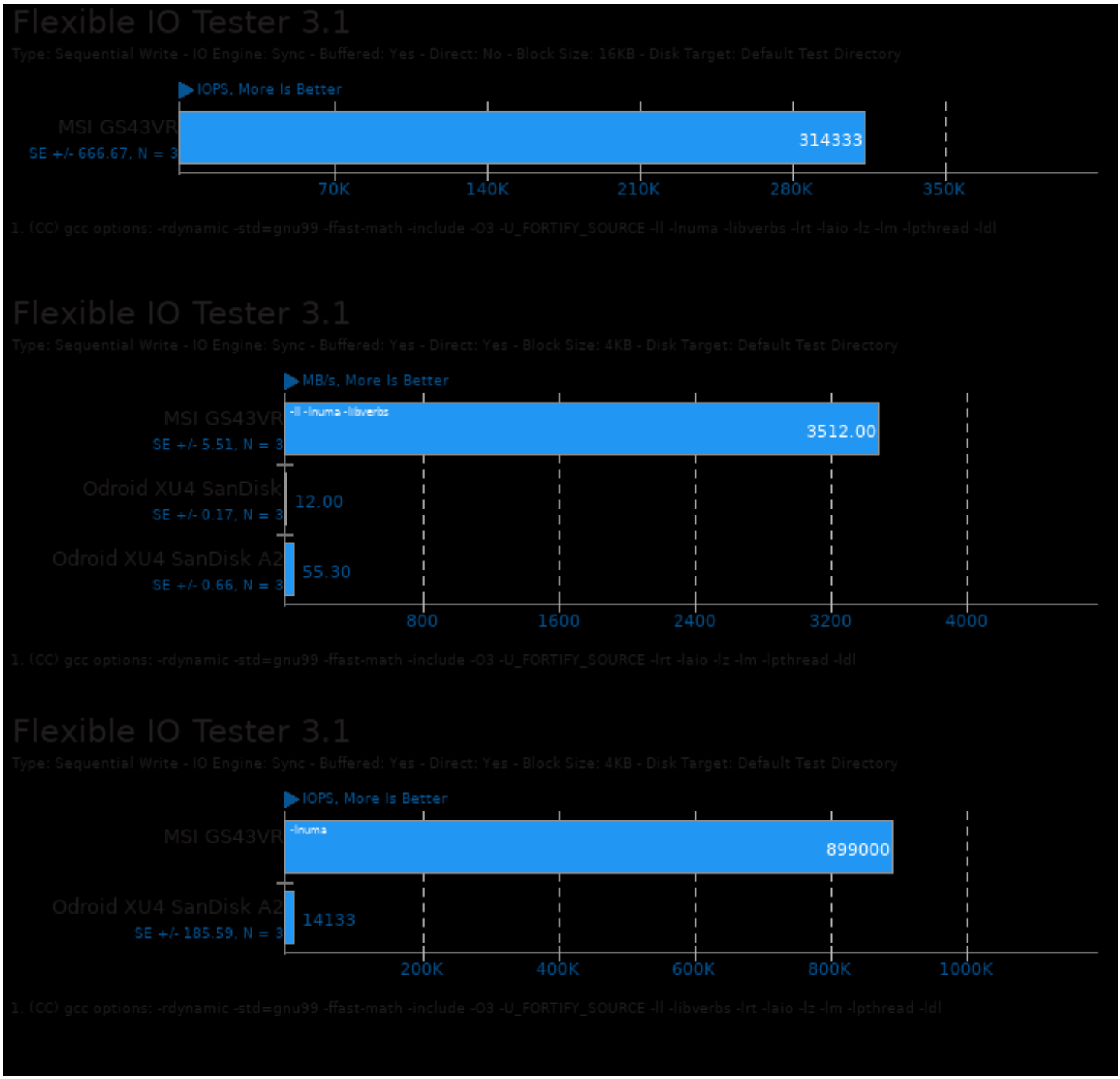
# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 0.88, N = 3
829.00
Odroid XU4 SanDisk
SE +/- 0.33, N = 3
54.73
Odroid XU4 SanDisk A2
SE +/- 0.32, N = 3
62.90
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 7.31, N = 3
8885
Odroid XU4 SanDisk
SE +/- 5.22, N = 12
335
Odroid XU4 SanDisk A2
SE +/- 5.36, N = 3
459
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
35533
8K
16K
24K
32K
40K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

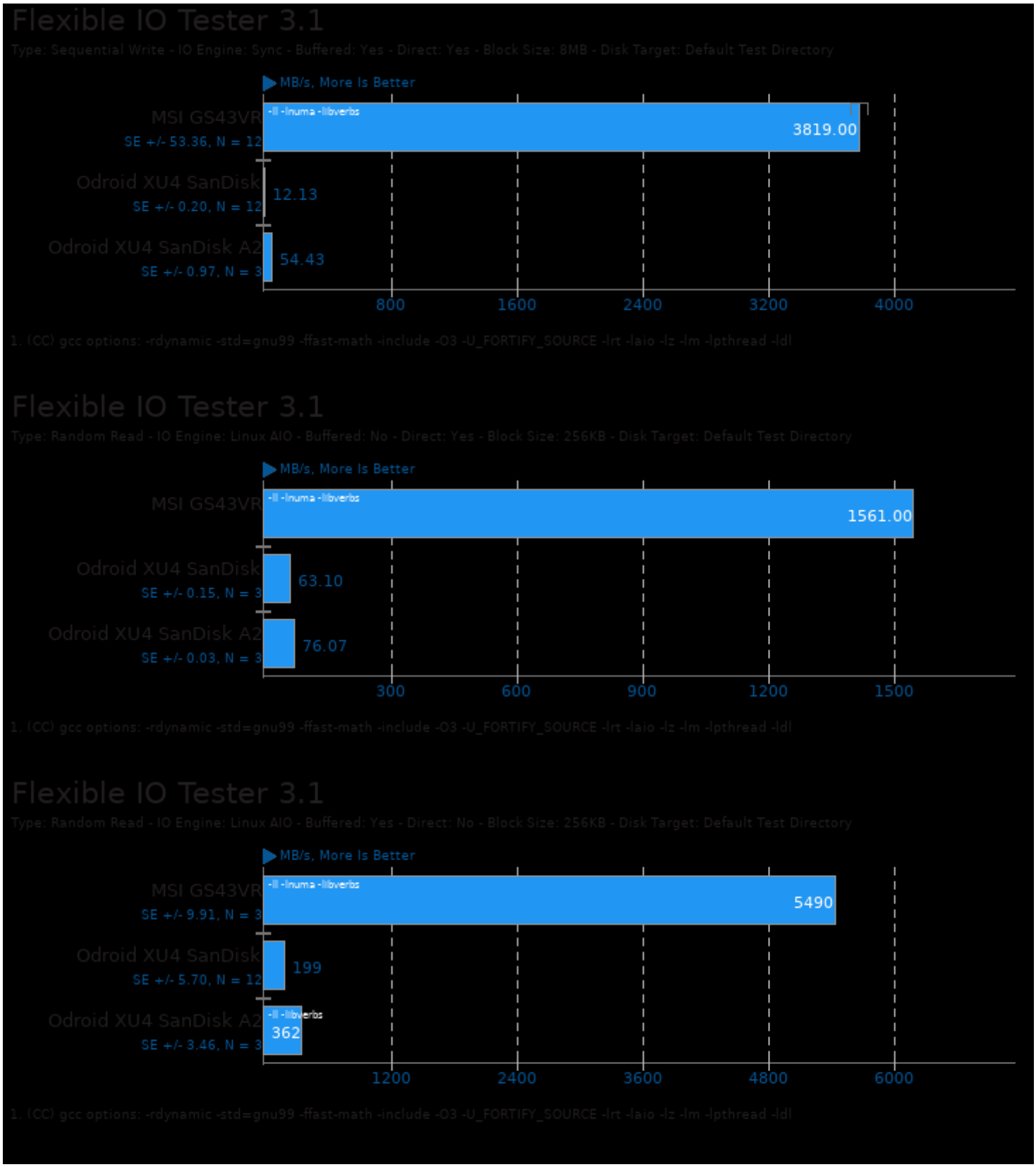

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 20.63, N = 3
-lll -lnuma -libverbs
7136
Odroid XU4 SanDisk
SE +/- 1.00, N = 3
270
Odroid XU4 SanDisk A2
SE +/- 4.93, N = 3
-lll -libverbs
377
1500
3000
4500
6000
7500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1201.85, N = 3
-lll -lnuma -libverbs
456667
Odroid XU4 SanDisk
SE +/- 57.74, N = 3
17300
Odroid XU4 SanDisk A2
SE +/- 317.98, N = 3
24133
100K
200K
300K
400K
500K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 4.84, N = 3
-lll -lnuma -libverbs
728.00
Odroid XU4 SanDisk
SE +/- 0.29, N = 12
11.28
Odroid XU4 SanDisk A2
SE +/- 0.33, N = 3
39.77
160
320
480
640
800
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

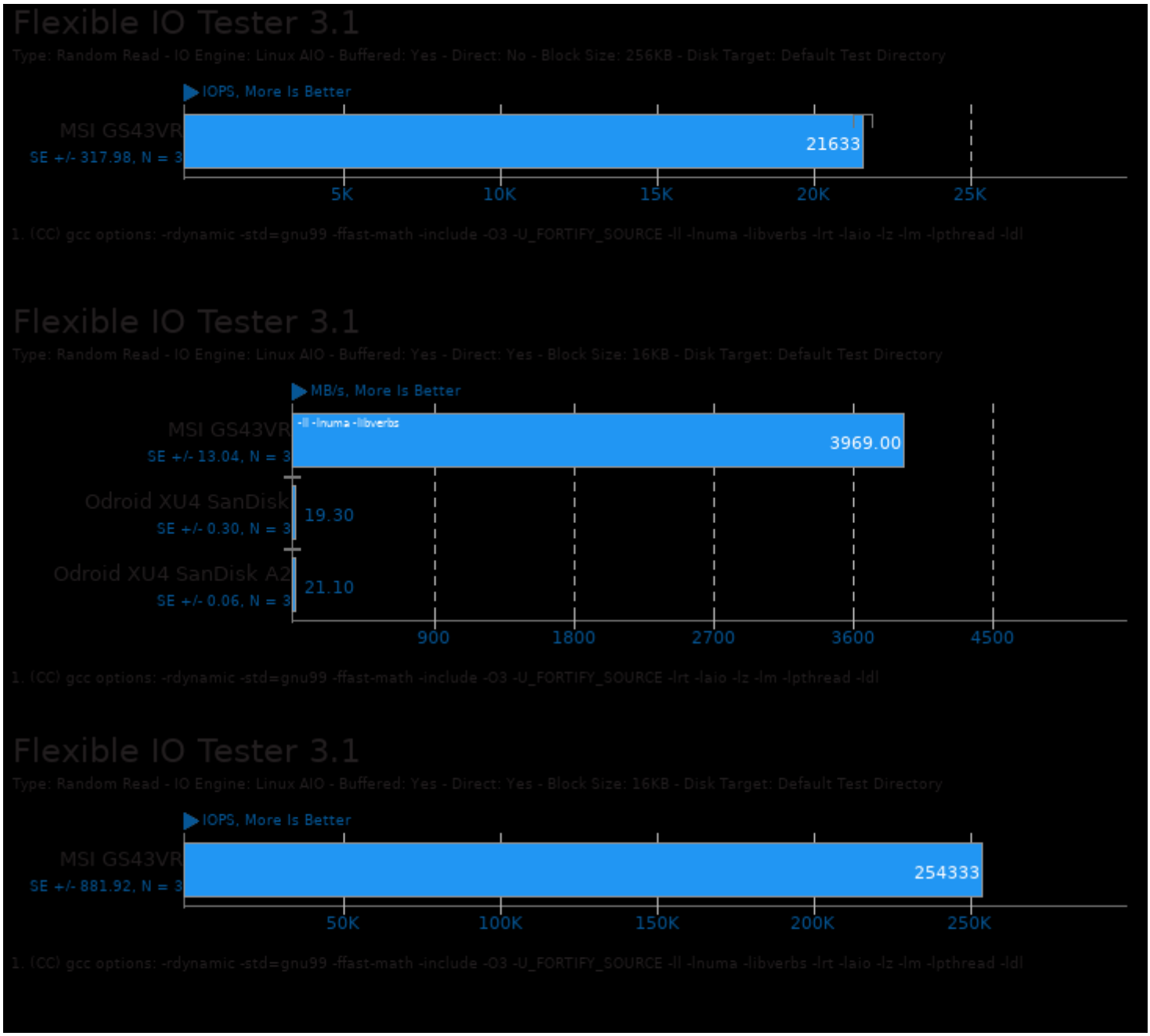

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 8.62, N = 3
-ll -lnuma -libverbs
483.00
Odroid XU4 SanDisk
SE +/- 0.23, N = 12
7.19
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
6.90
100
200
300
400
500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 233.33, N = 3
30567
7K
14K
21K
28K
35K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 13.42, N = 3
-ll -lnuma -libverbs
4911.00
Odroid XU4 SanDisk
SE +/- 0.24, N = 3
12.43
Odroid XU4 SanDisk A2
SE +/- 0.49, N = 3
55.67
1100
2200
3300
4400
5500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

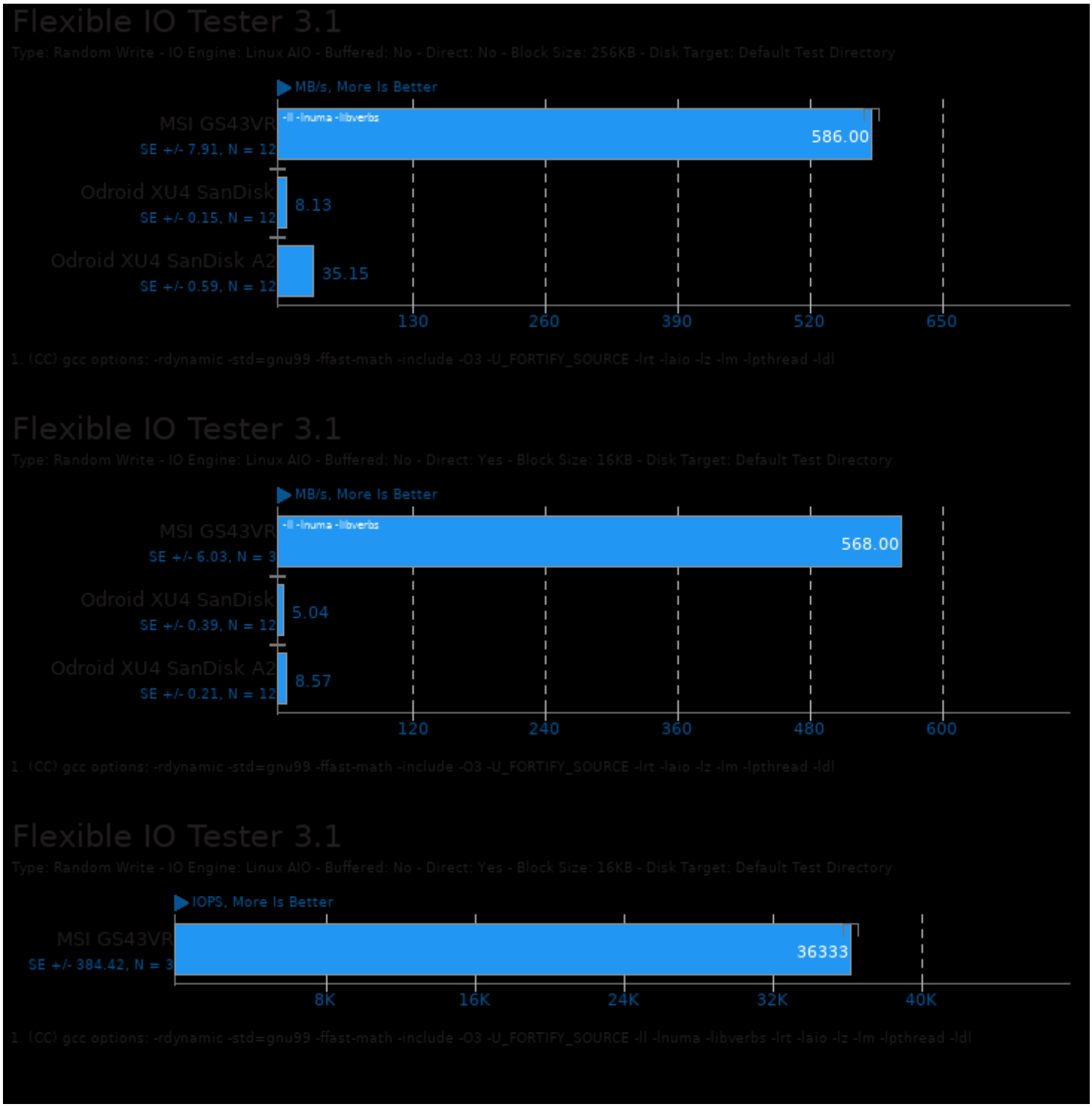

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 666.67, N = 3
314333
70K
140K
210K
280K
350K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 5.51, N = 3
3512.00
Odroid XU4 SanDisk
SE +/- 0.17, N = 3
12.00
Odroid XU4 SanDisk A2
SE +/- 0.66, N = 3
55.30
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
-lnuma
899000
Odroid XU4 SanDisk A2
SE +/- 185.59, N = 3
14133
200K
400K
600K
800K
1000K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

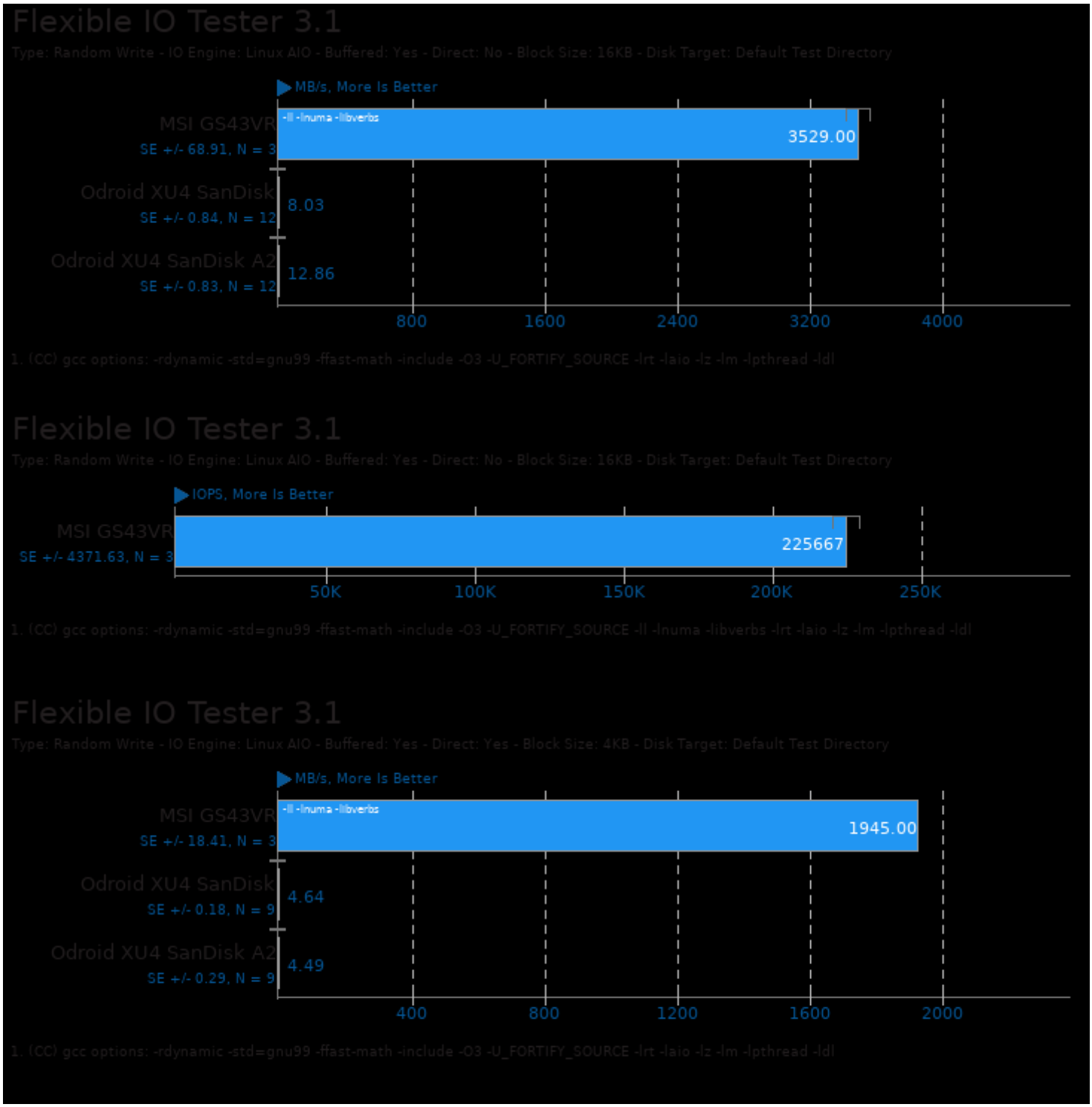

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 53.36, N = 12
-lll -lnuma -llibverbs
3819.00
Odroid XU4 SanDisk
SE +/- 0.20, N = 12
12.13
Odroid XU4 SanDisk A2
SE +/- 0.97, N = 3
54.43
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-lll -lnuma -llibverbs
1561.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 3
63.10
Odroid XU4 SanDisk A2
SE +/- 0.03, N = 3
76.07
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 9.91, N = 3
-lll -lnuma -llibverbs
5490
Odroid XU4 SanDisk
SE +/- 5.70, N = 12
199
Odroid XU4 SanDisk A2
SE +/- 3.46, N = 3
-lll -llibverbs
362
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

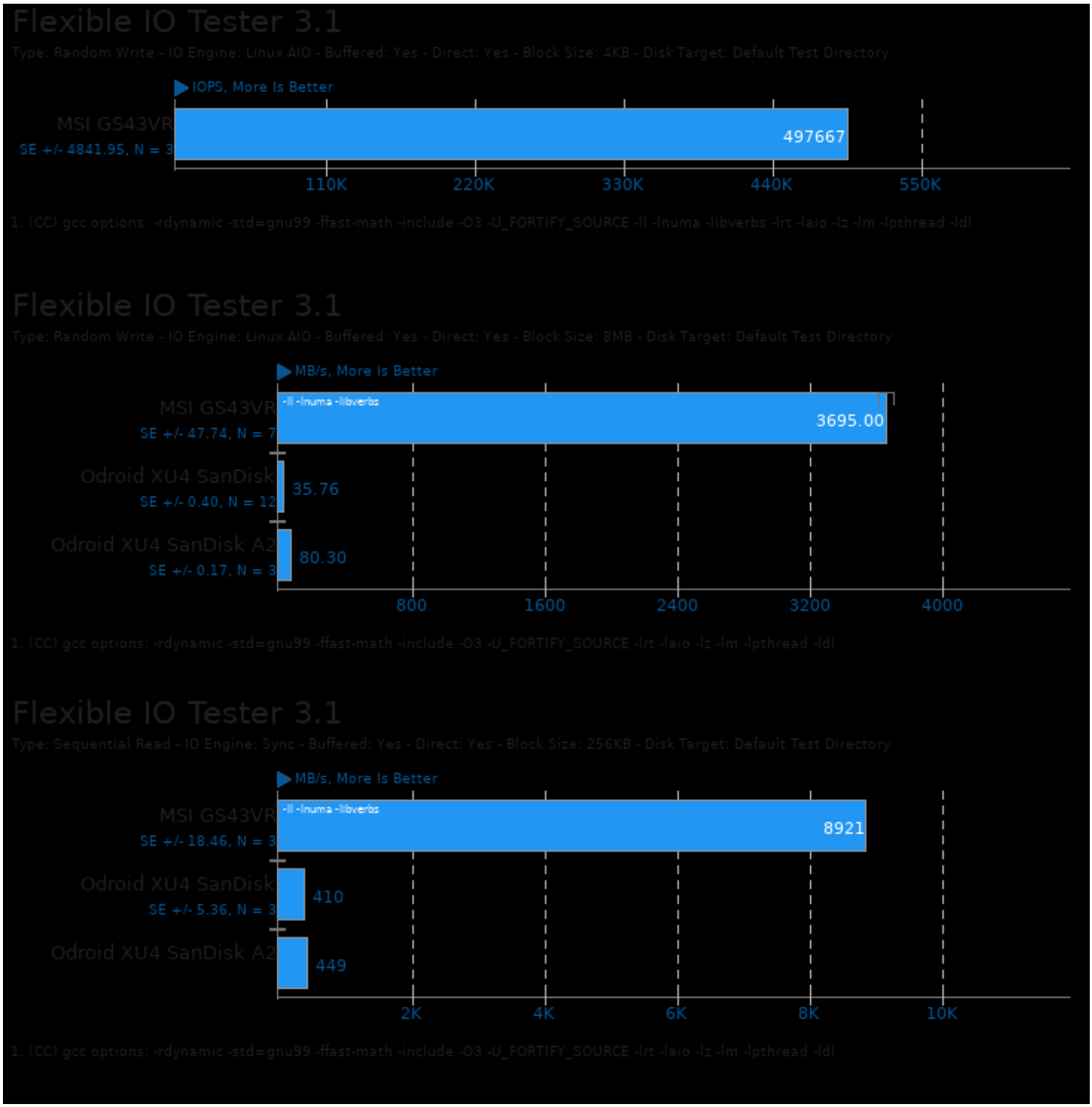

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 317.98, N = 3
21633
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -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
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 13.04, N = 3
3969.00
Odroid XU4 SanDisk
SE +/- 0.30, N = 3
19.30
Odroid XU4 SanDisk A2
SE +/- 0.06, N = 3
21.10
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -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
MSI GS43VR
SE +/- 881.92, N = 3
254333
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

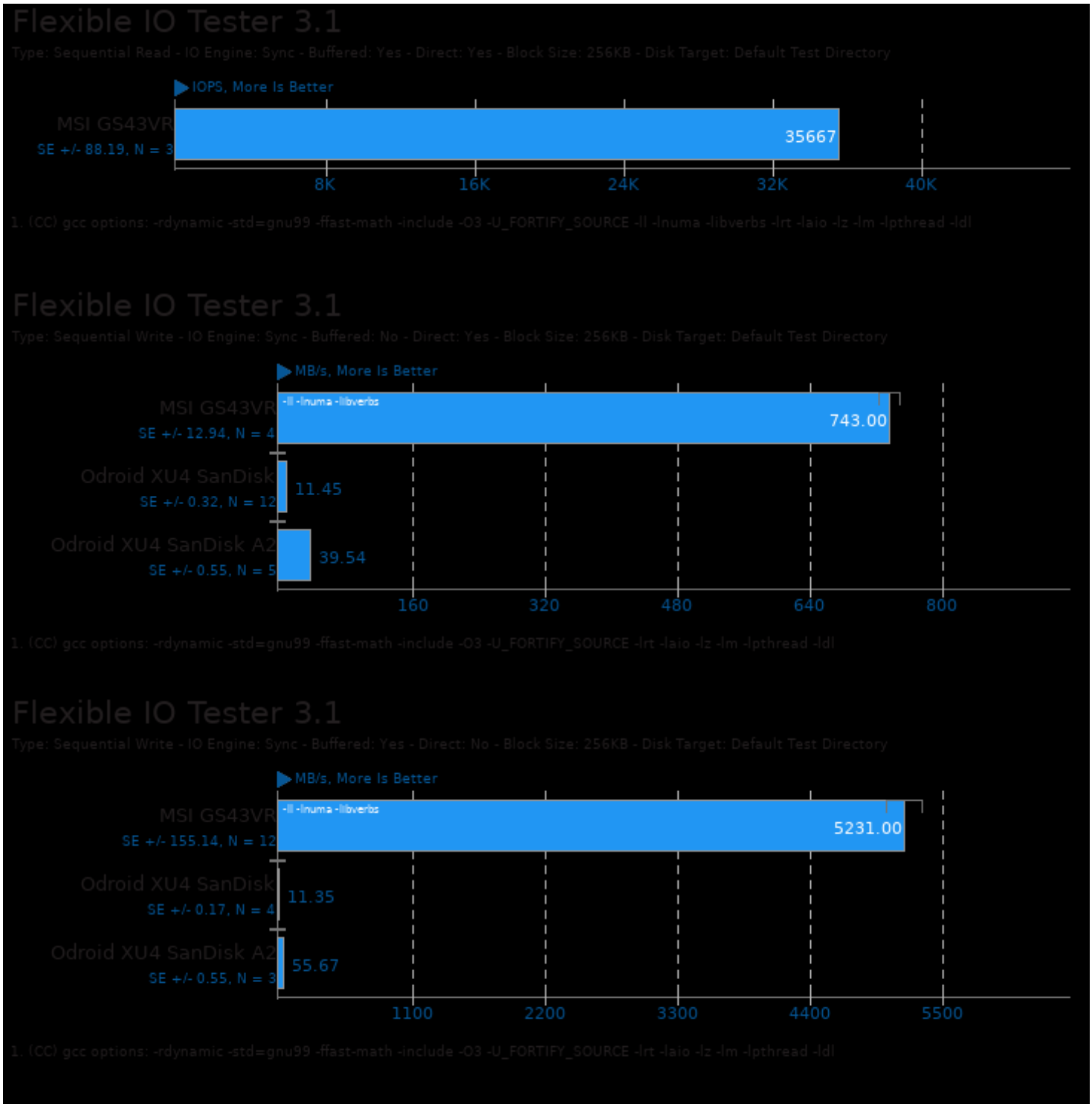

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 7.91, N = 12
-ll -lnuma -libverbs
586.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 12
8.13
Odroid XU4 SanDisk A2
SE +/- 0.59, N = 12
35.15
130
260
390
520
650
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 6.03, N = 3
-ll -lnuma -libverbs
568.00
Odroid XU4 SanDisk
SE +/- 0.39, N = 12
5.04
Odroid XU4 SanDisk A2
SE +/- 0.21, N = 12
8.57
120
240
360
480
600
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 384.42, N = 3
36333
8K
16K
24K
32K
40K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

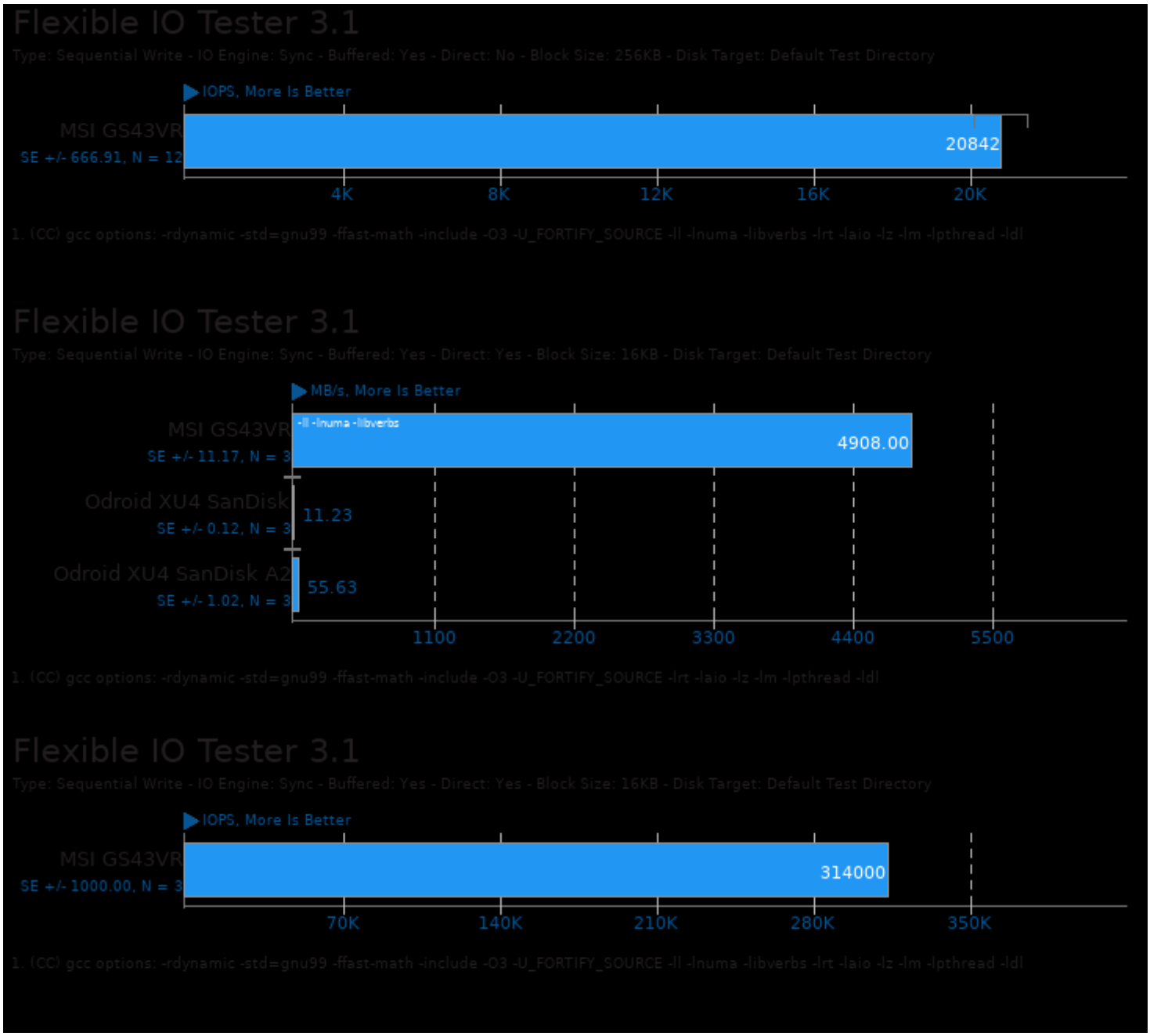

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 68.91, N = 3
-ll -lnuma -libverbs
3529.00
Odroid XU4 SanDisk
SE +/- 0.84, N = 12
8.03
Odroid XU4 SanDisk A2
SE +/- 0.83, N = 12
12.86
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 4371.63, N = 3
225667
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 18.41, N = 3
-ll -lnuma -libverbs
1945.00
Odroid XU4 SanDisk
SE +/- 0.18, N = 9
4.64
Odroid XU4 SanDisk A2
SE +/- 0.29, N = 9
4.49
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

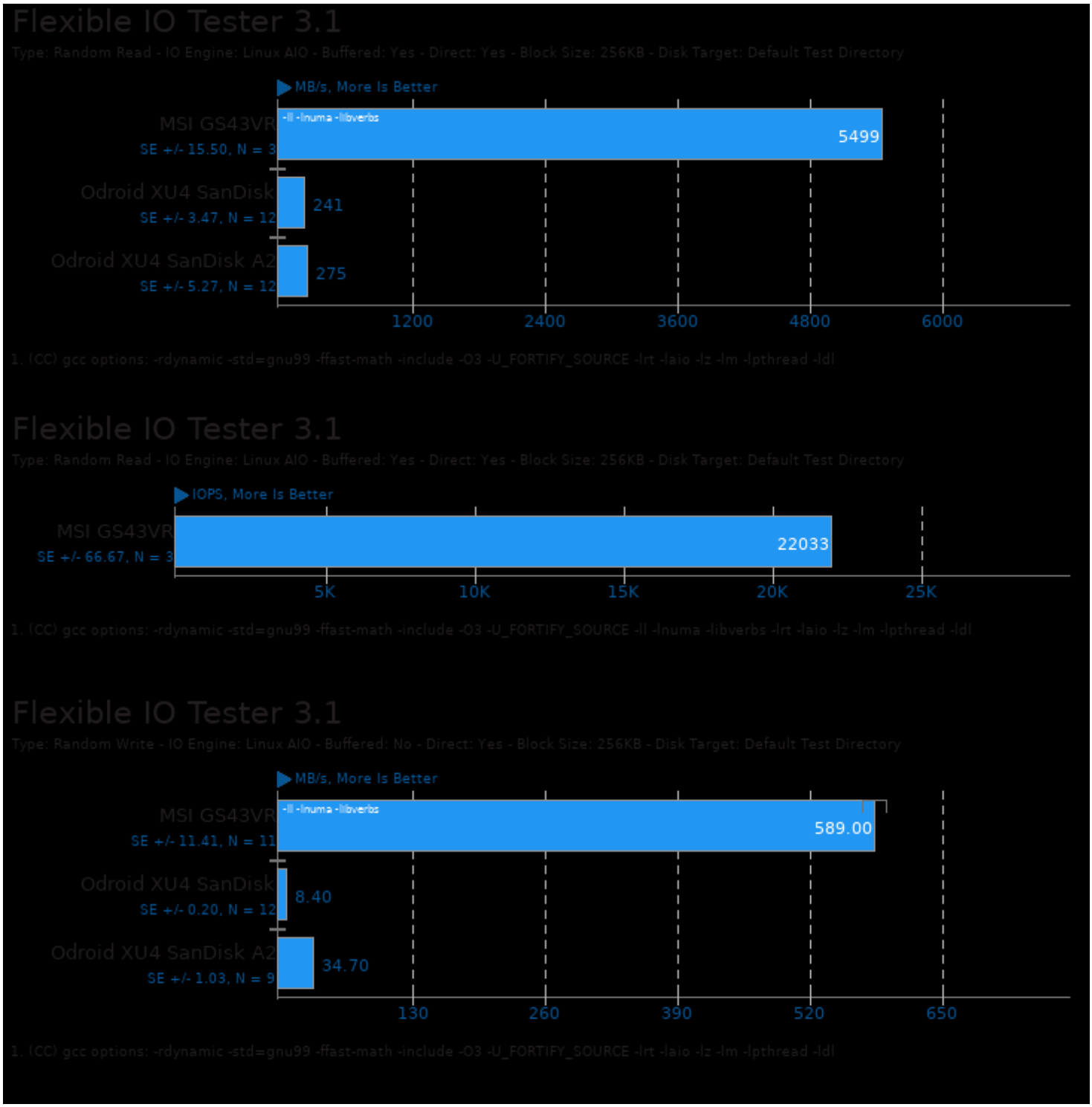

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 4841.95, N = 3
497667
110K
220K
330K
440K
550K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 47.74, N = 7
-ll -lnuma -libverbs
3695.00
Odroid XU4 SanDisk
SE +/- 0.40, N = 12
35.76
Odroid XU4 SanDisk A2
SE +/- 0.17, N = 3
80.30
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 18.46, N = 3
-ll -lnuma -libverbs
8921
Odroid XU4 SanDisk
SE +/- 5.36, N = 3
410
Odroid XU4 SanDisk A2
449
2K
4K
6K
8K
10K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 88.19, N = 3
35667
8K
16K
24K
32K
40K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 12.94, N = 4
743.00
Odroid XU4 SanDisk
SE +/- 0.32, N = 12
11.45
Odroid XU4 SanDisk A2
SE +/- 0.55, N = 5
39.54
160
320
480
640
800
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 155.14, N = 12
5231.00
Odroid XU4 SanDisk
SE +/- 0.17, N = 4
11.35
Odroid XU4 SanDisk A2
SE +/- 0.55, N = 3
55.67
1100
2200
3300
4400
5500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

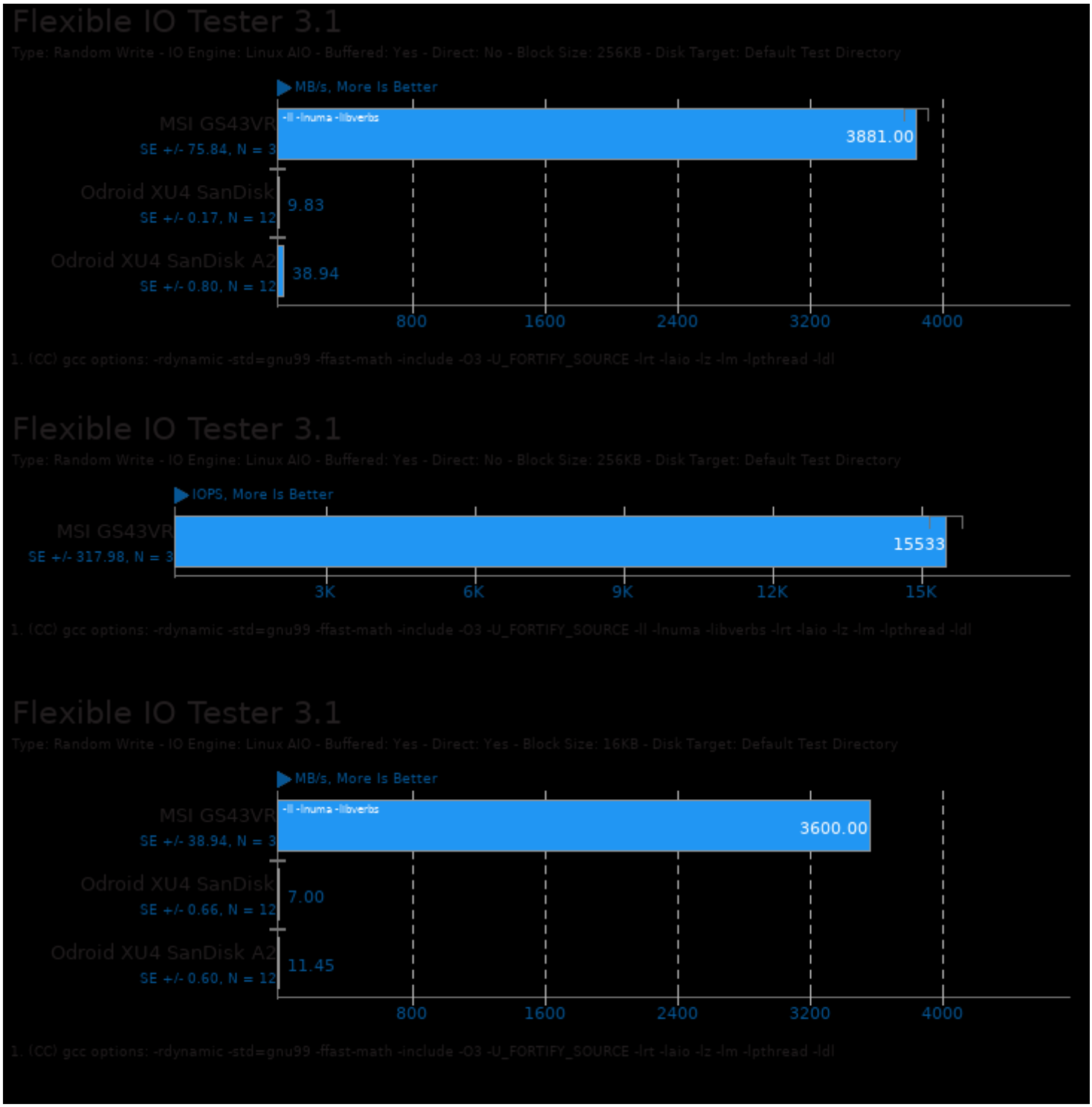
# HD+Crypto

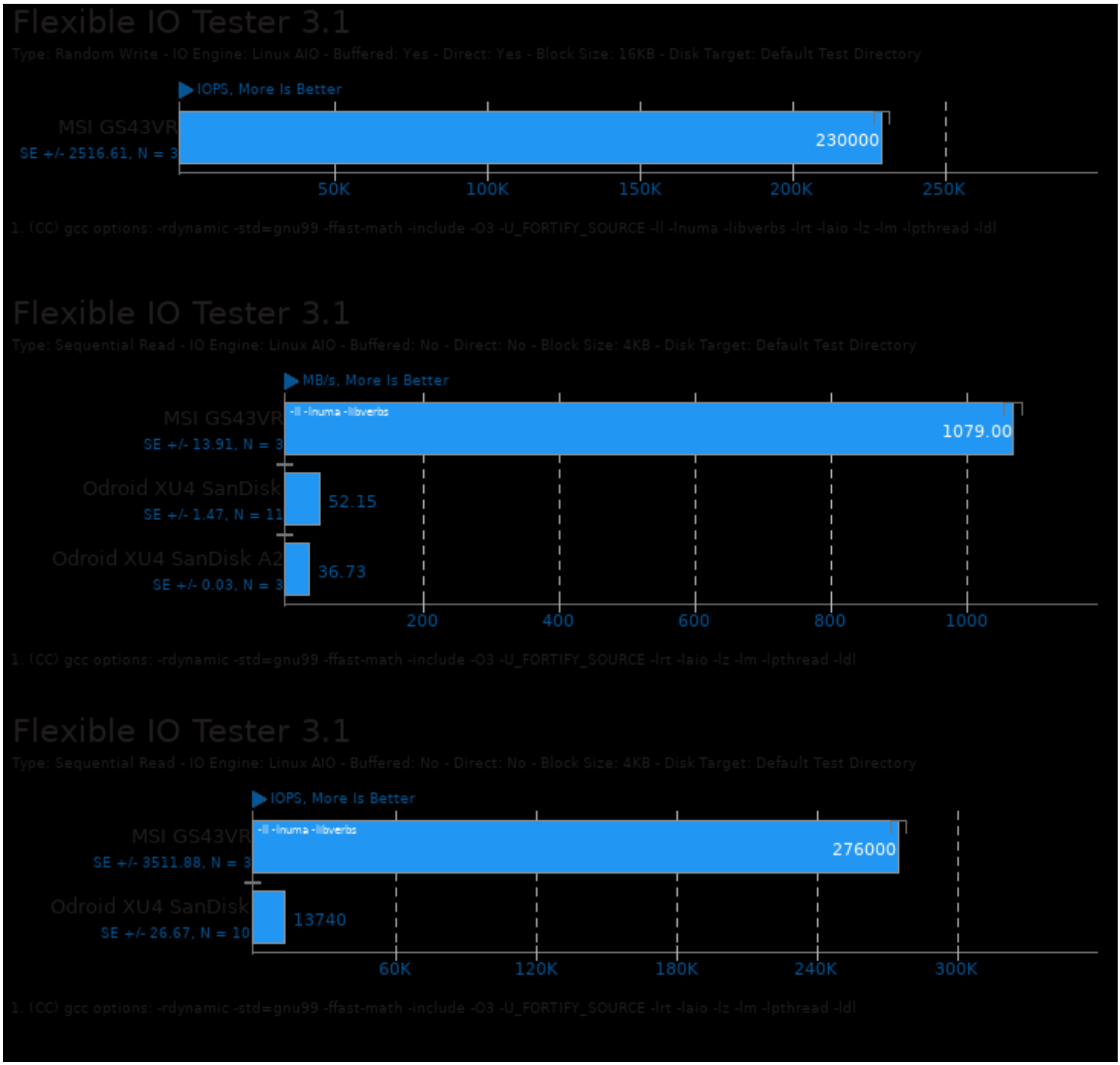

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 666.91, N = 12
20842
4K
8K
12K
16K
20K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 11.17, N = 3
4908.00
Odroid XU4 SanDisk
SE +/- 0.12, N = 3
11.23
Odroid XU4 SanDisk A2
SE +/- 1.02, N = 3
55.63
1100
2200
3300
4400
5500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1000.00, N = 3
314000
70K
140K
210K
280K
350K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

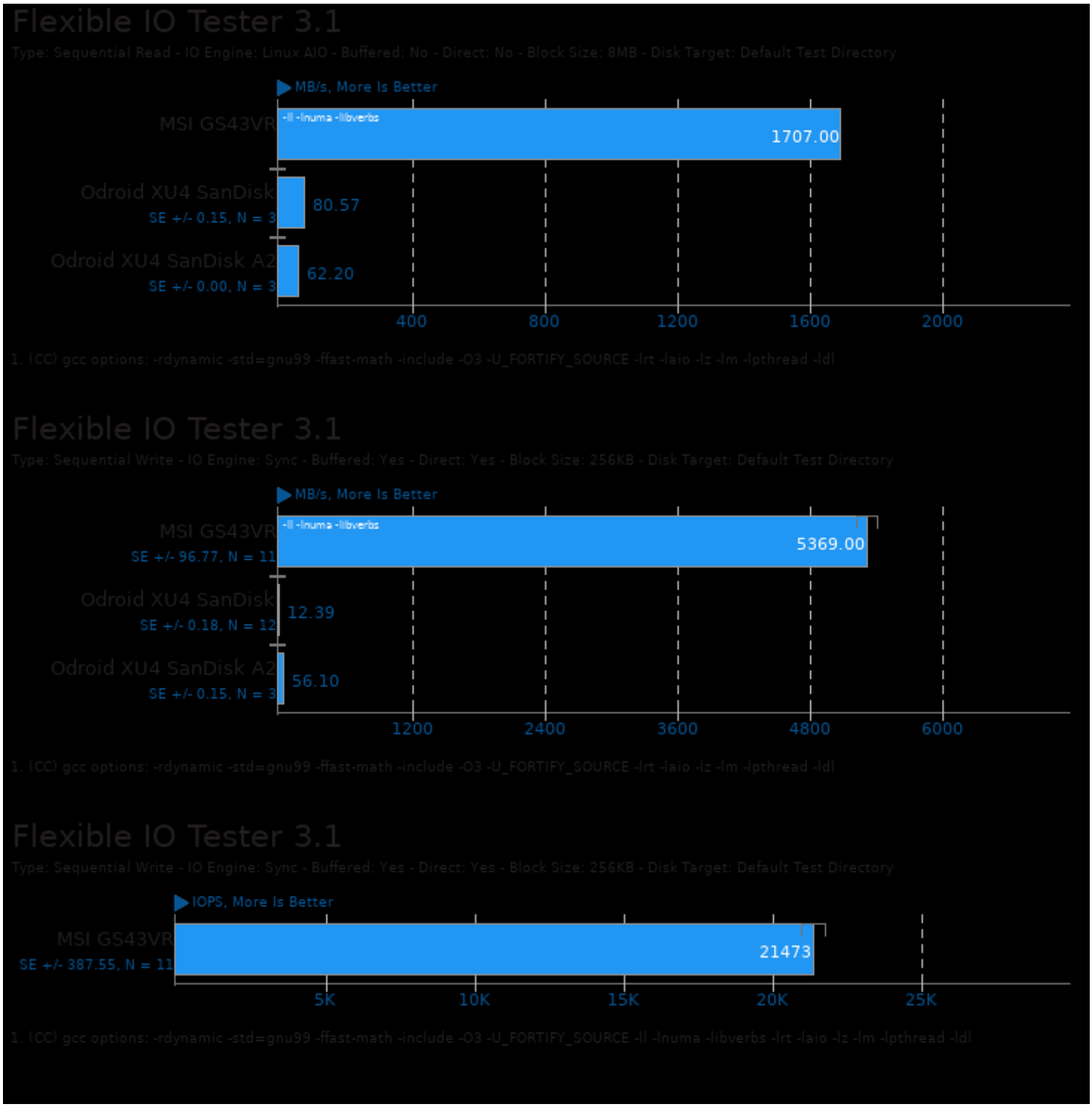

Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 15.50, N = 3
-ll -lnuma -libverbs
5499
Odroid XU4 SanDisk
SE +/- 3.47, N = 12
241
Odroid XU4 SanDisk A2
SE +/- 5.27, N = 12
275
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 66.67, N = 3
22033
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 11.41, N = 11
-ll -lnuma -libverbs
589.00
Odroid XU4 SanDisk
SE +/- 0.20, N = 12
8.40
Odroid XU4 SanDisk A2
SE +/- 1.03, N = 9
34.70
130
260
390
520
650
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

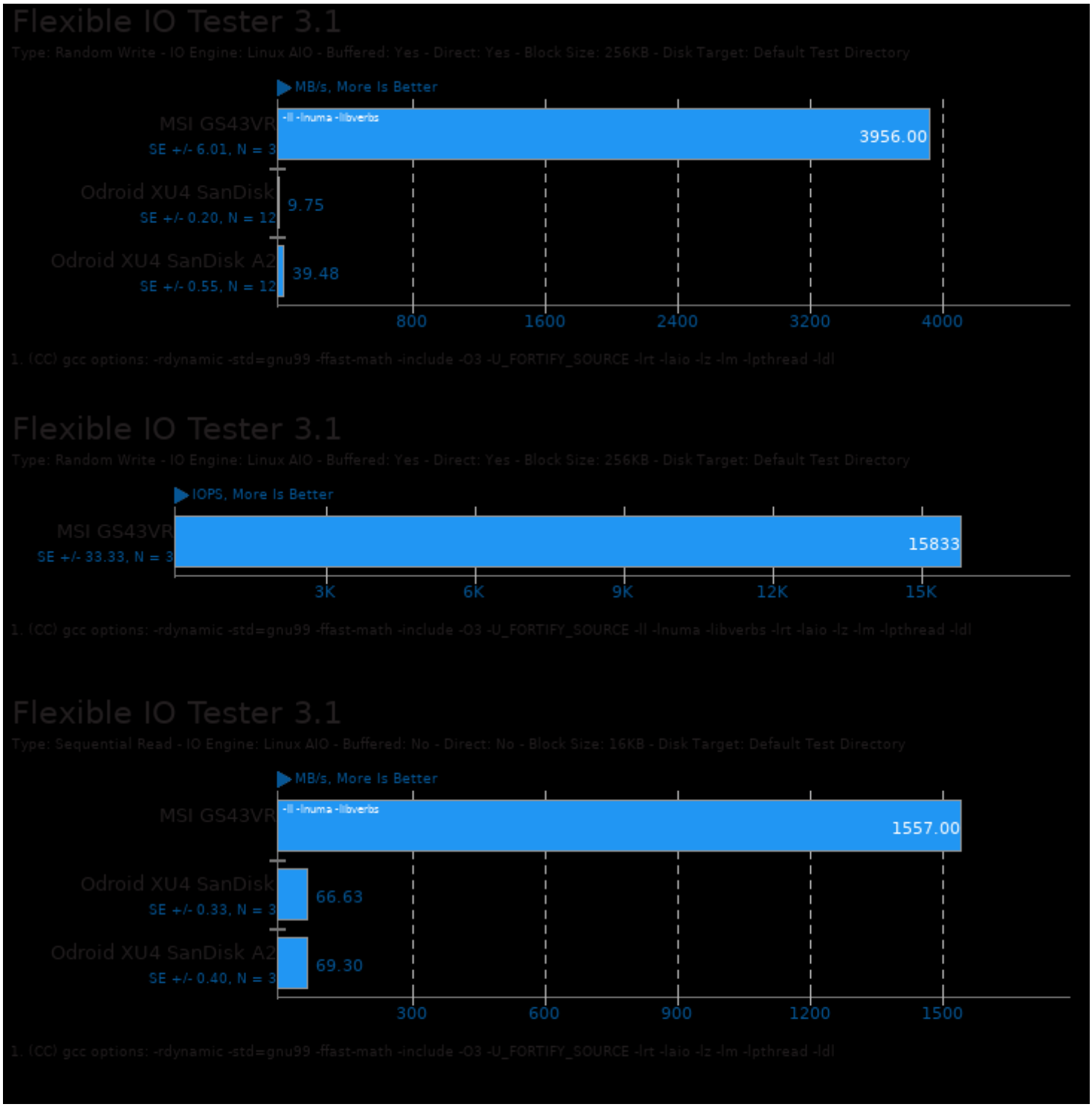

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 75.84, N = 3
-ll -lnuma -libverbs
3881.00
Odroid XU4 SanDisk
SE +/- 0.17, N = 12
9.83
Odroid XU4 SanDisk A2
SE +/- 0.80, N = 12
38.94
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 317.98, N = 3
15533
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 38.94, N = 3
-ll -lnuma -libverbs
3600.00
Odroid XU4 SanDisk
SE +/- 0.66, N = 12
7.00
Odroid XU4 SanDisk A2
SE +/- 0.60, N = 12
11.45
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 2516.61, N = 3
230000
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 13.91, N = 3
1079.00
Odroid XU4 SanDisk
SE +/- 1.47, N = 11
52.15
Odroid XU4 SanDisk A2
SE +/- 0.03, N = 3
36.73
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 3511.88, N = 3
276000
Odroid XU4 SanDisk
SE +/- 26.67, N = 10
13740
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

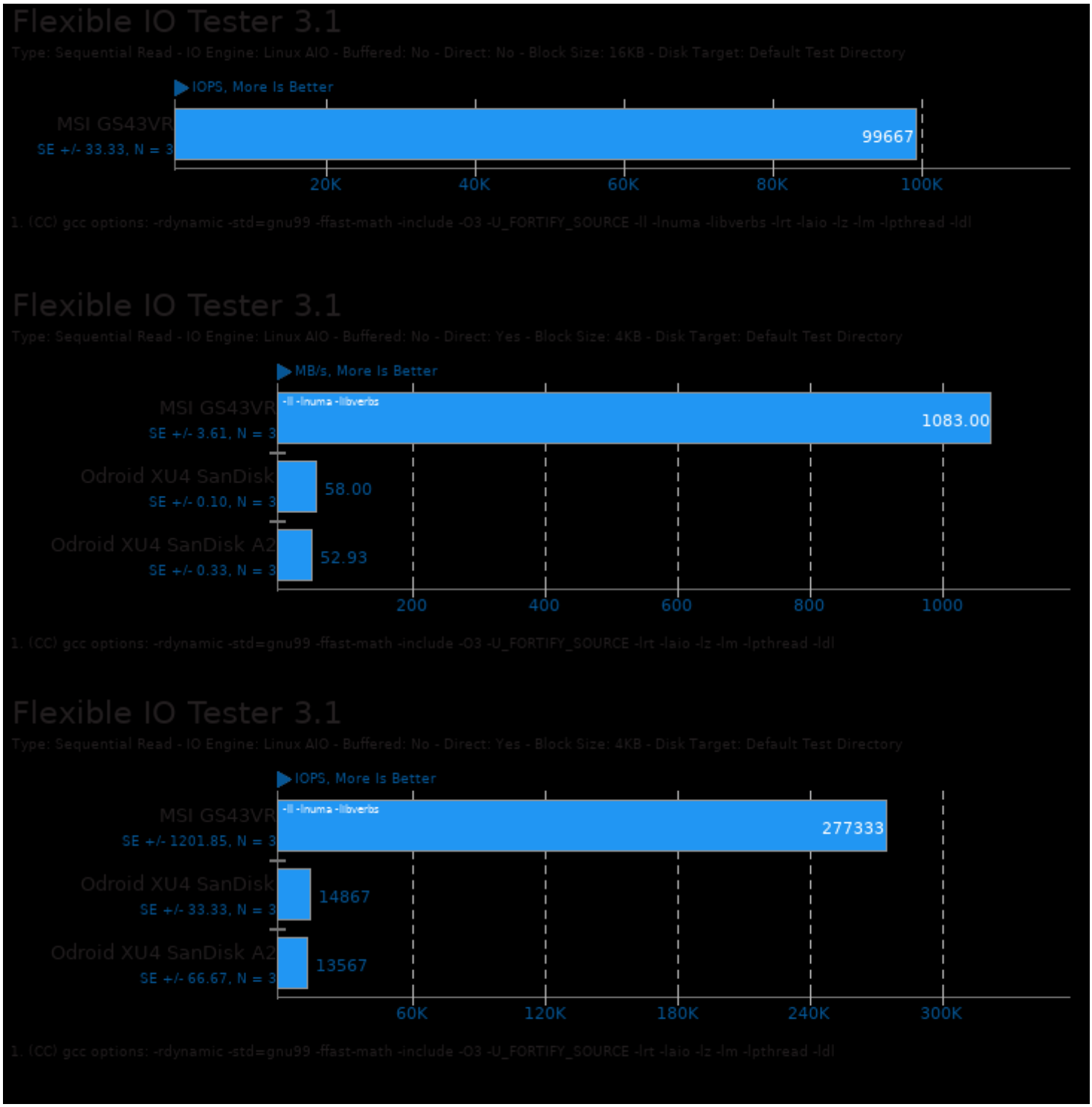
# HD+Crypto

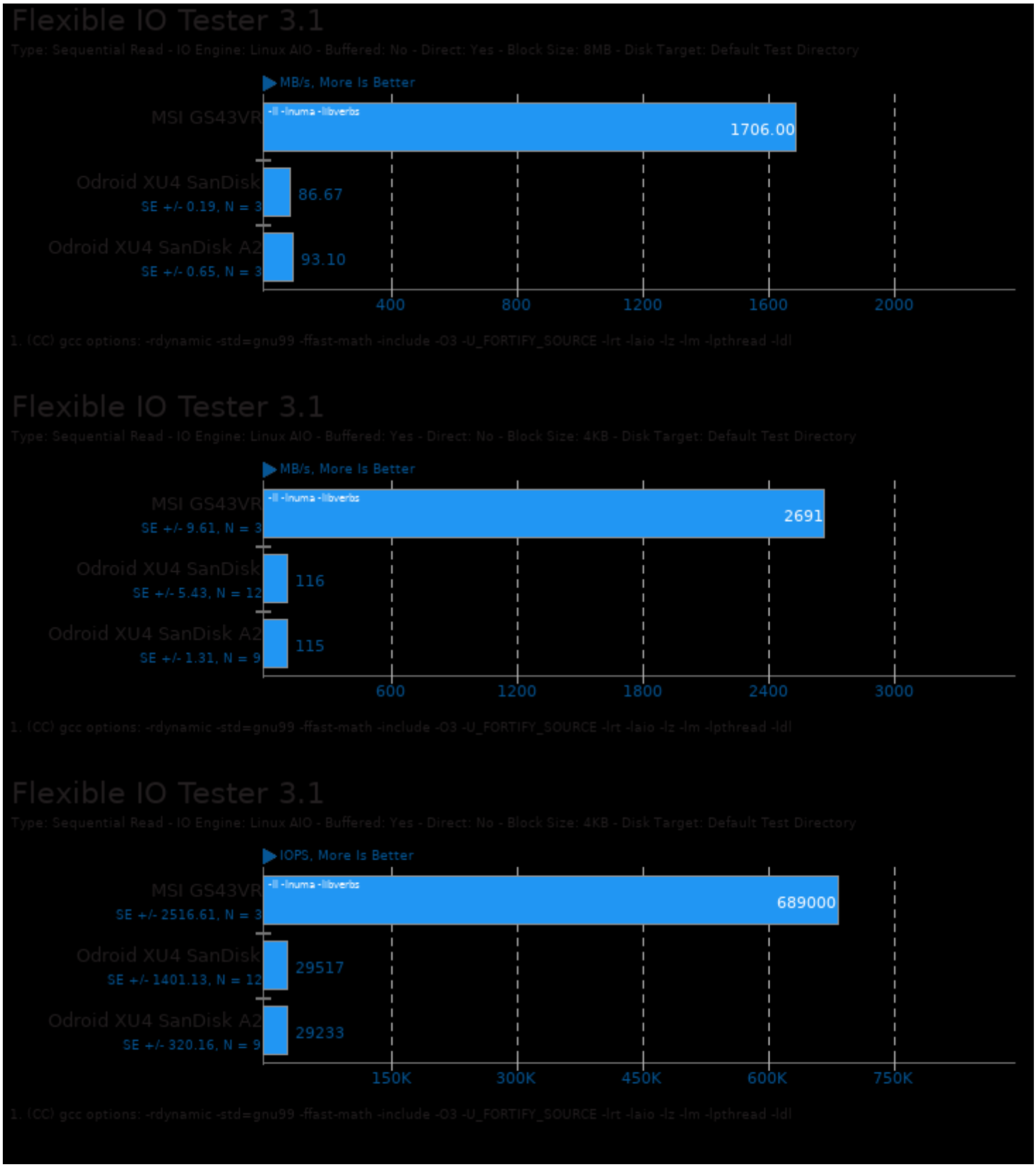

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
1707.00
Odroid XU4 SanDisk
SE +/- 0.15, N = 3
80.57
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
62.20
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 96.77, N = 11
-ll -lnuma -libverbs
5369.00
Odroid XU4 SanDisk
SE +/- 0.18, N = 12
12.39
Odroid XU4 SanDisk A2
SE +/- 0.15, N = 3
56.10
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Sync - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 387.55, N = 11
21473
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

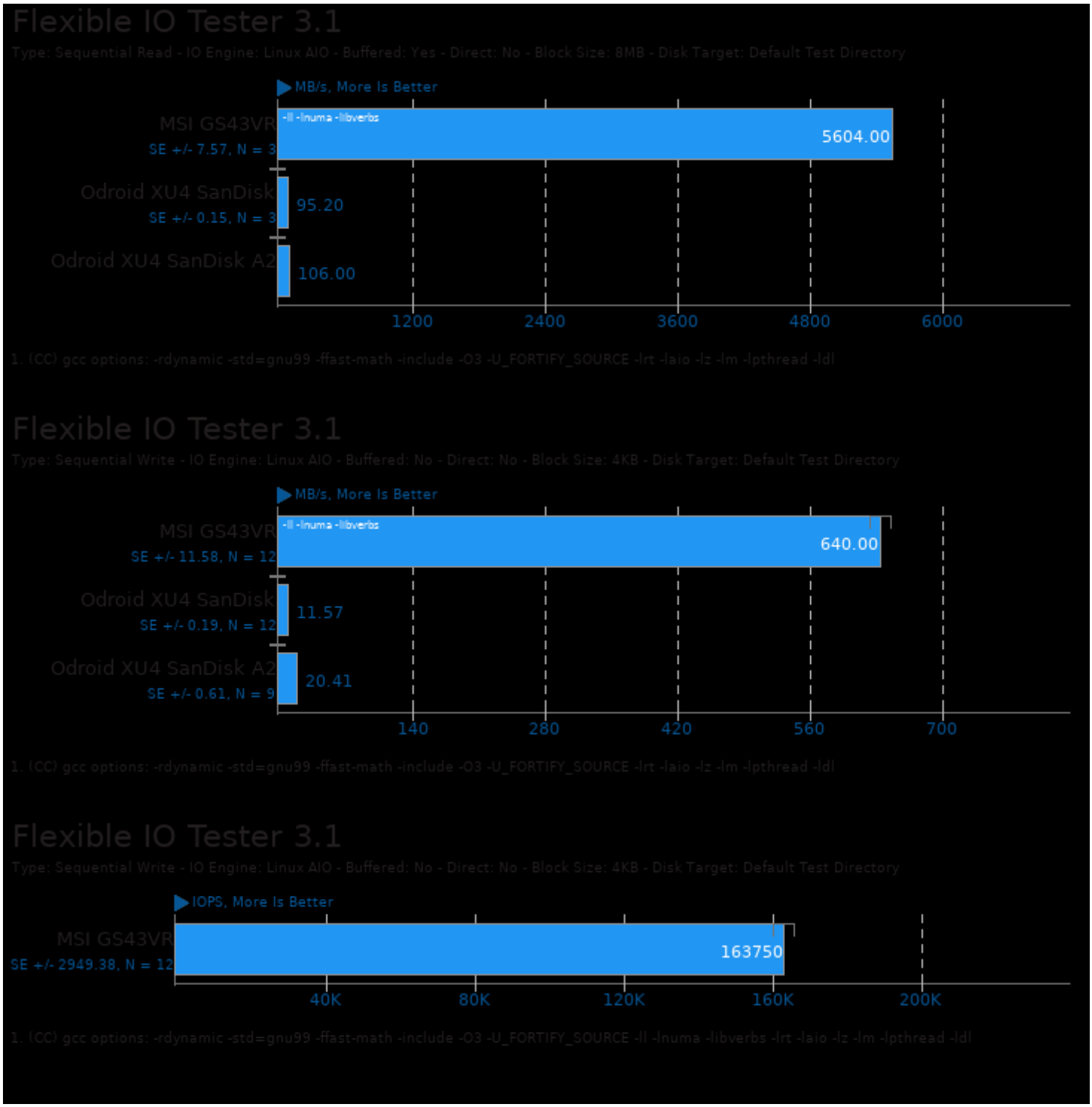

Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 6.01, N = 3
-ll -lnuma -libverbs
3956.00
Odroid XU4 SanDisk
SE +/- 0.20, N = 12
9.75
Odroid XU4 SanDisk A2
SE +/- 0.55, N = 12
39.48
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Random Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
15833
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
1557.00
Odroid XU4 SanDisk
SE +/- 0.33, N = 3
66.63
Odroid XU4 SanDisk A2
SE +/- 0.40, N = 3
69.30
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

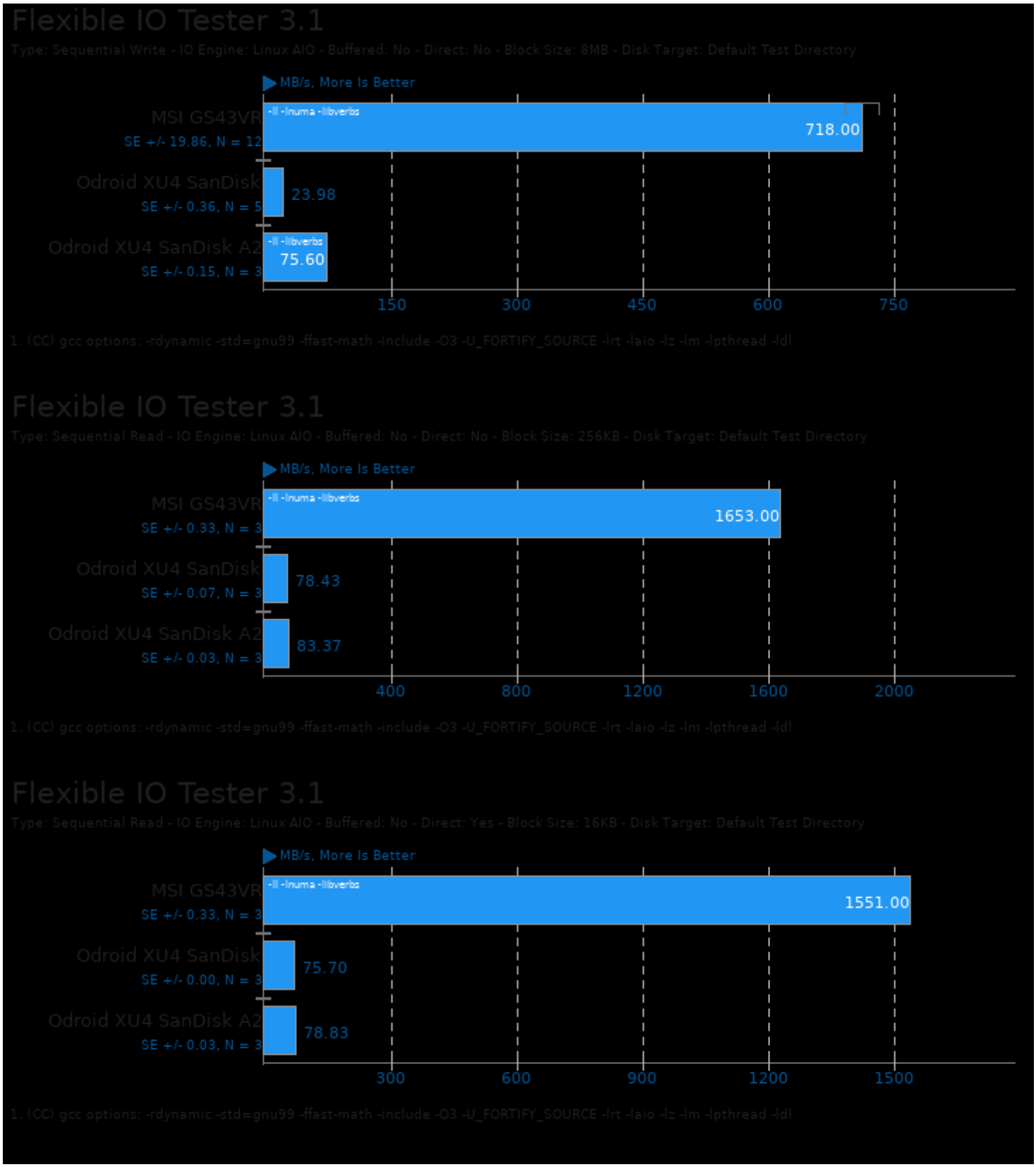

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
99667
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 3.61, N = 3
1083.00
Odroid XU4 SanDisk
SE +/- 0.10, N = 3
58.00
Odroid XU4 SanDisk A2
SE +/- 0.33, N = 3
52.93
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 1201.85, N = 3
277333
Odroid XU4 SanDisk
SE +/- 33.33, N = 3
14867
Odroid XU4 SanDisk A2
SE +/- 66.67, N = 3
13567
60K
120K
180K
240K
300K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-lll -lnuma -libverbs
1706.00
Odroid XU4 SanDisk
SE +/- 0.19, N = 3
86.67
Odroid XU4 SanDisk A2
SE +/- 0.65, N = 3
93.10
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 9.61, N = 3
-lll -lnuma -libverbs
2691
Odroid XU4 SanDisk
SE +/- 5.43, N = 12
116
Odroid XU4 SanDisk A2
SE +/- 1.31, N = 9
115
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 2516.61, N = 3
-lll -lnuma -libverbs
689000
Odroid XU4 SanDisk
SE +/- 1401.13, N = 12
29517
Odroid XU4 SanDisk A2
SE +/- 320.16, N = 9
29233
150K
300K
450K
600K
750K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

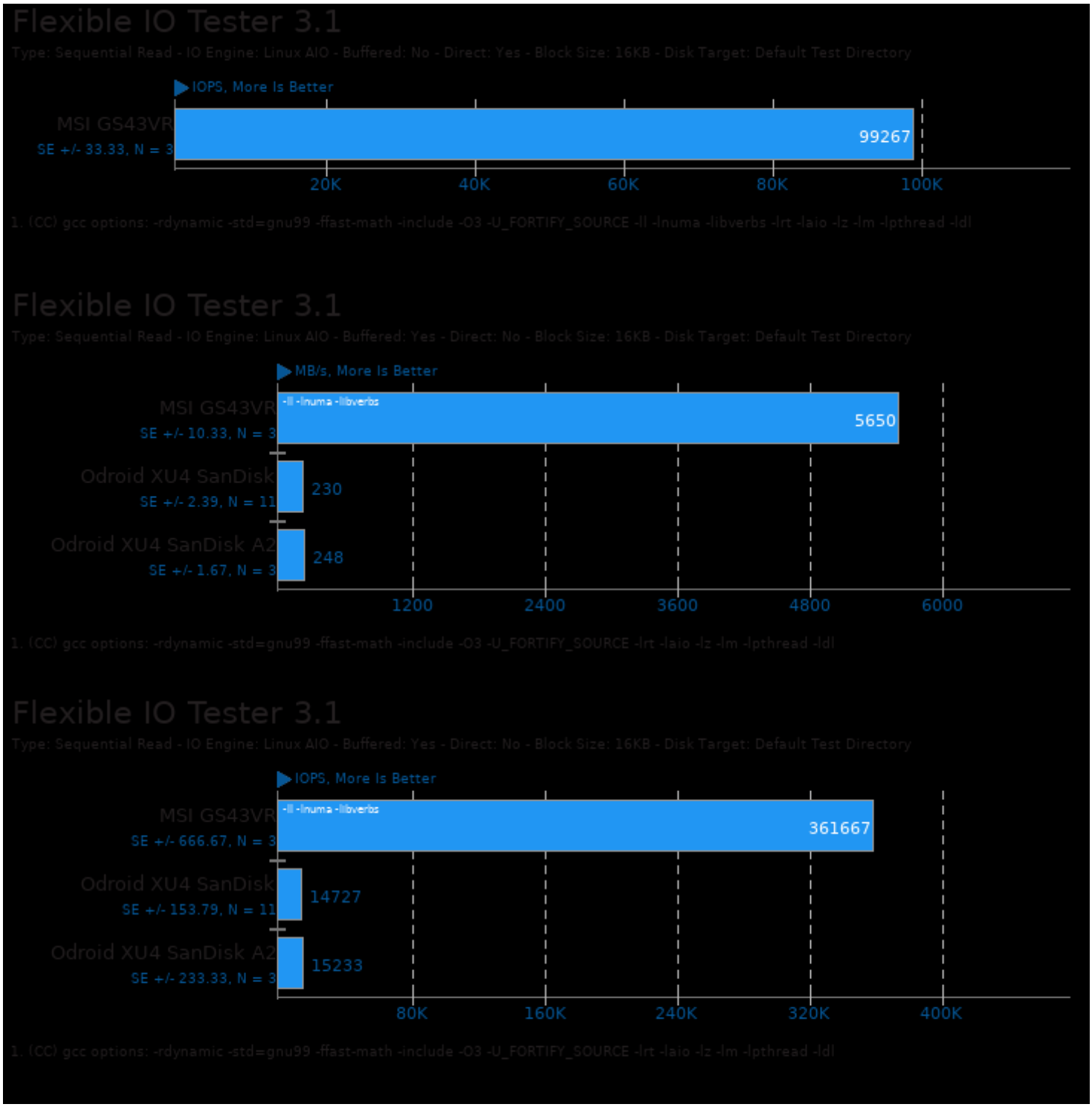
# HD+Crypto

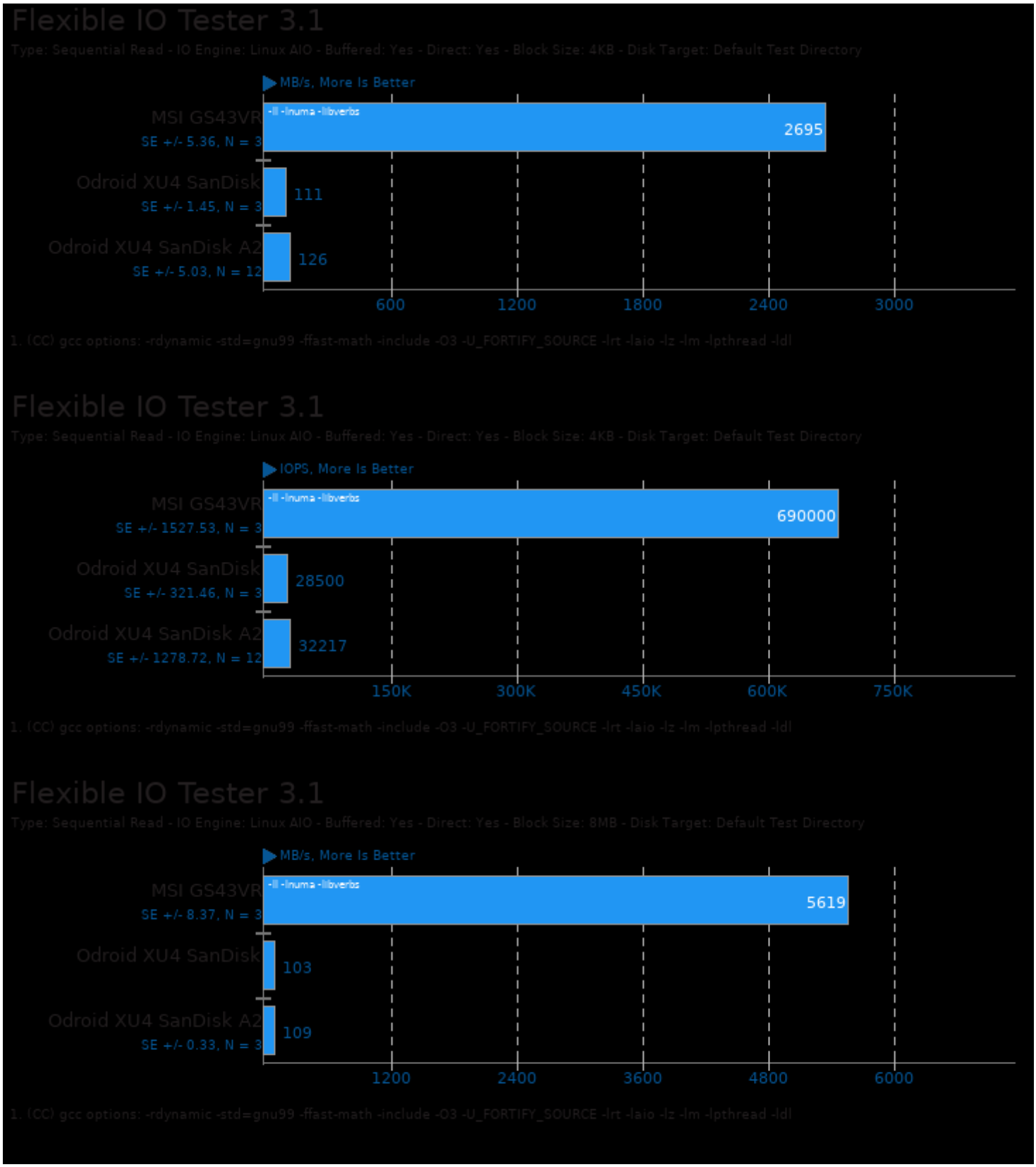

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
5604.00
SE +/- 7.57, N = 3
Odroid XU4 SanDisk
95.20
SE +/- 0.15, N = 3
Odroid XU4 SanDisk A2
106.00
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
640.00
SE +/- 11.58, N = 12
Odroid XU4 SanDisk
11.57
SE +/- 0.19, N = 12
Odroid XU4 SanDisk A2
20.41
SE +/- 0.61, N = 9
140
280
420
560
700
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
163750
SE +/- 2949.38, N = 12
40K
80K
120K
160K
200K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

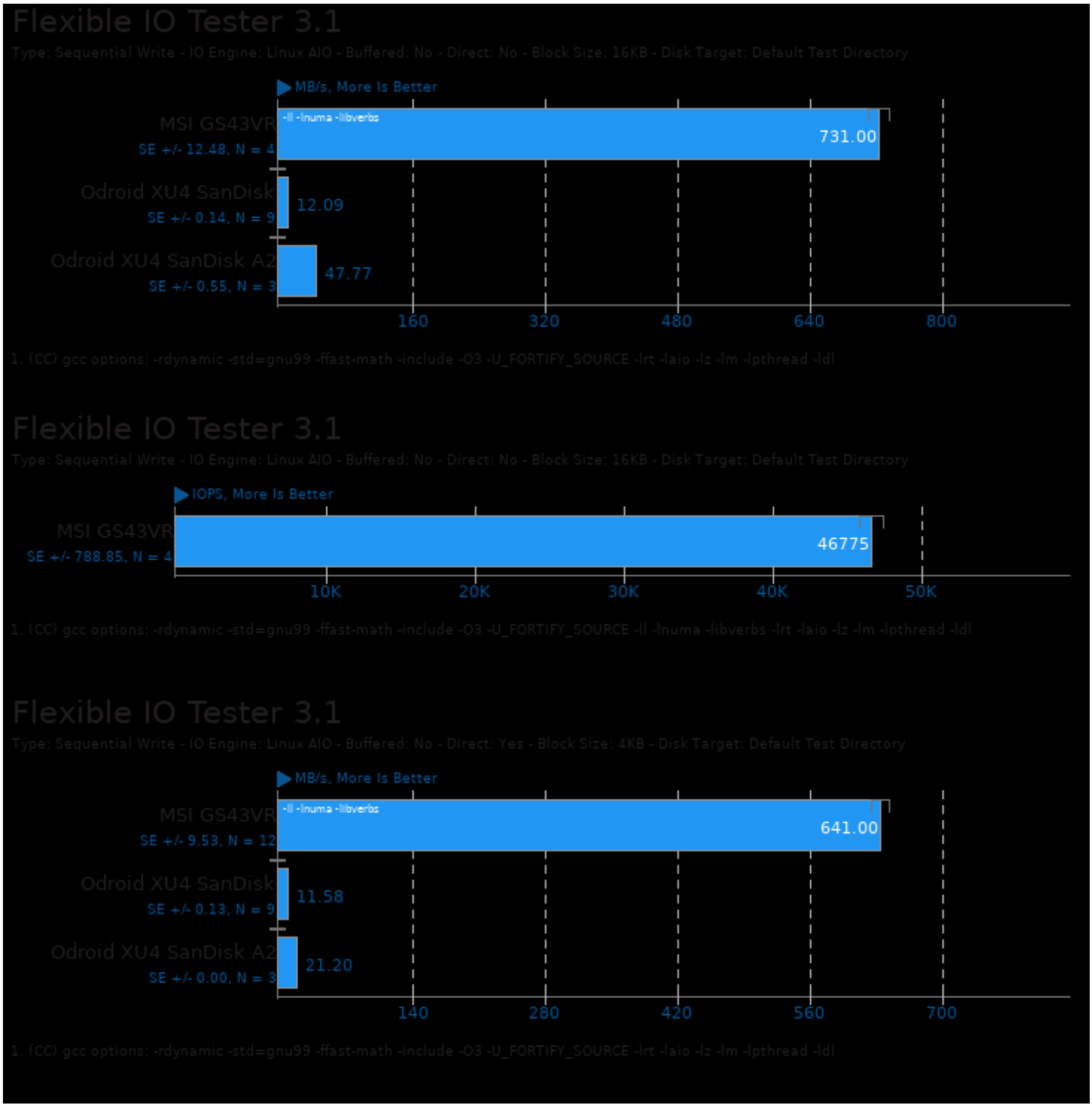

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 19.86, N = 12
-lll -lnuma -libverbs
718.00
Odroid XU4 SanDisk
SE +/- 0.36, N = 5
23.98
Odroid XU4 SanDisk A2
SE +/- 0.15, N = 3
-lll -libverbs
75.60
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.33, N = 3
-lll -lnuma -libverbs
1653.00
Odroid XU4 SanDisk
SE +/- 0.07, N = 3
78.43
Odroid XU4 SanDisk A2
SE +/- 0.03, N = 3
83.37
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 0.33, N = 3
-lll -lnuma -libverbs
1551.00
Odroid XU4 SanDisk
SE +/- 0.00, N = 3
75.70
Odroid XU4 SanDisk A2
SE +/- 0.03, N = 3
78.83
300
600
900
1200
1500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

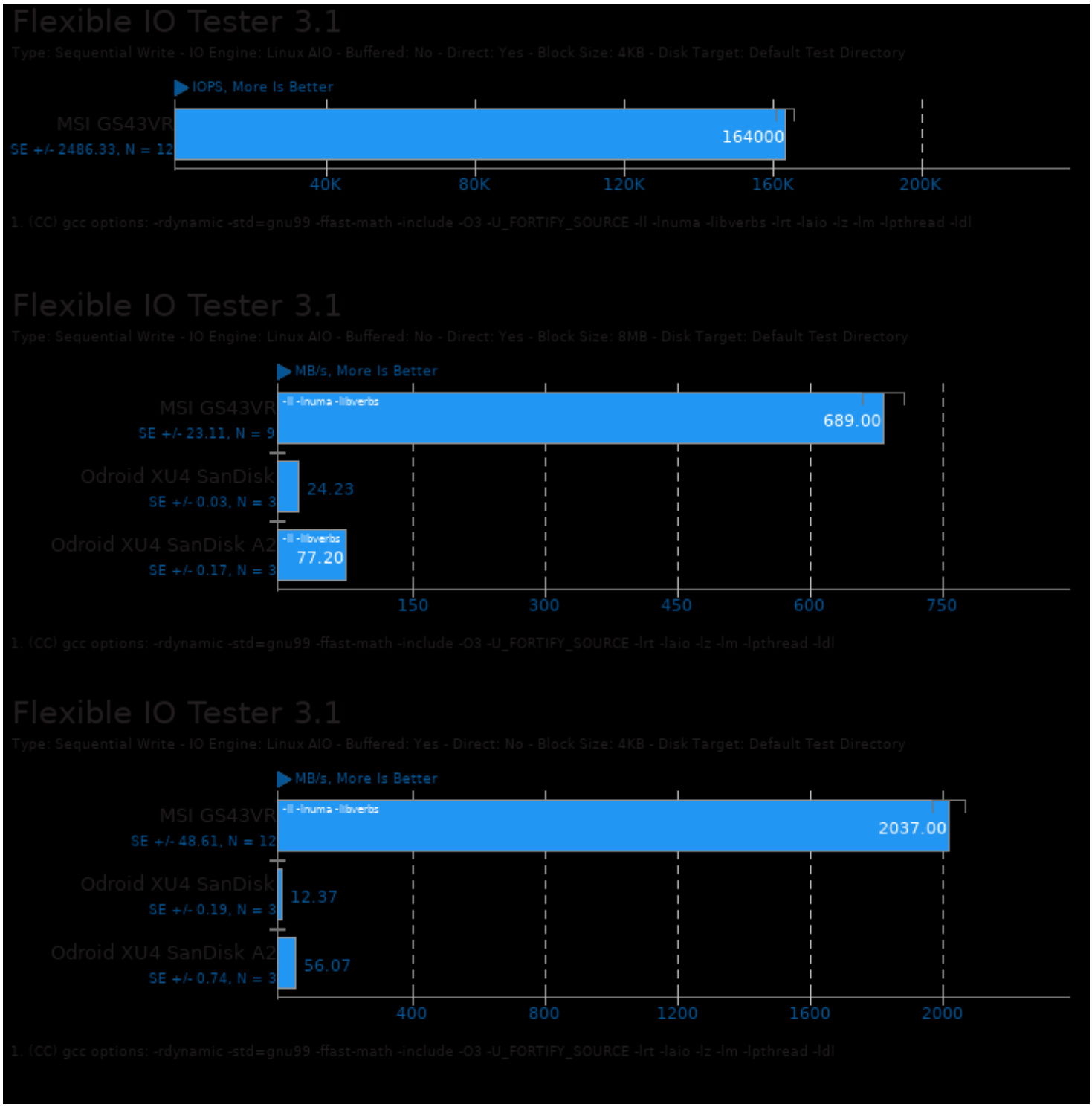

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
99267
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 10.33, N = 3
5650
Odroid XU4 SanDisk
SE +/- 2.39, N = 11
230
Odroid XU4 SanDisk A2
SE +/- 1.67, N = 3
248
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 666.67, N = 3
361667
Odroid XU4 SanDisk
SE +/- 153.79, N = 11
14727
Odroid XU4 SanDisk A2
SE +/- 233.33, N = 3
15233
80K
160K
240K
320K
400K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 5.36, N = 3
-ill -lnuma -libverbs
2695
Odroid XU4 SanDisk
SE +/- 1.45, N = 3
111
Odroid XU4 SanDisk A2
SE +/- 5.03, N = 12
126
600
1200
1800
2400
3000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 1527.53, N = 3
-ill -lnuma -libverbs
690000
Odroid XU4 SanDisk
SE +/- 321.46, N = 3
28500
Odroid XU4 SanDisk A2
SE +/- 1278.72, N = 12
32217
150K
300K
450K
600K
750K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 8.37, N = 3
-ill -lnuma -libverbs
5619
Odroid XU4 SanDisk
103
Odroid XU4 SanDisk A2
SE +/- 0.33, N = 3
109
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

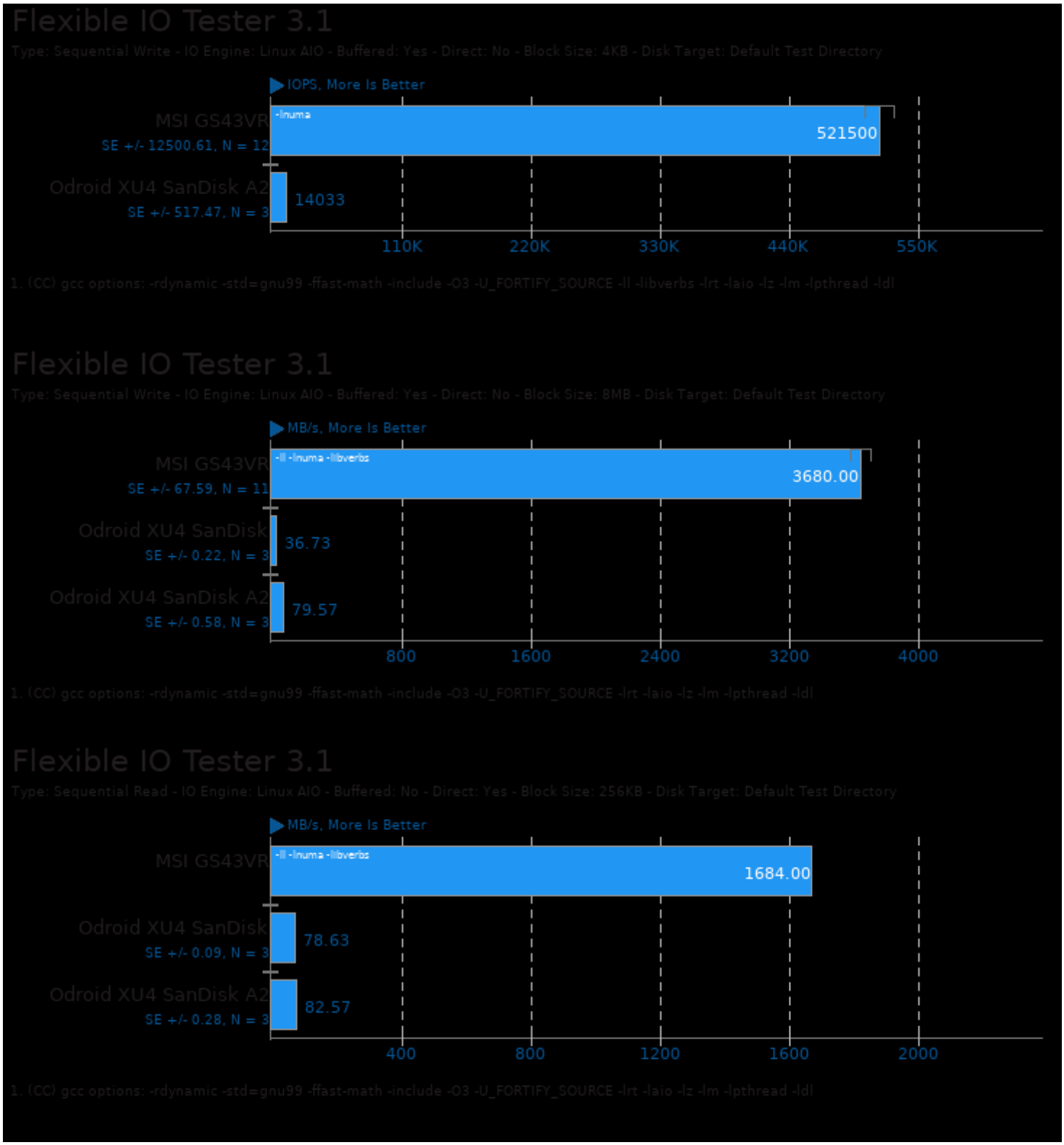
# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 12.48, N = 4
-ll -lnuma -libverbs
731.00
Odroid XU4 SanDisk
SE +/- 0.14, N = 9
12.09
Odroid XU4 SanDisk A2
SE +/- 0.55, N = 3
47.77
160
320
480
640
800
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 788.85, N = 4
46775
10K
20K
30K
40K
50K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 9.53, N = 12
-ll -lnuma -libverbs
641.00
Odroid XU4 SanDisk
SE +/- 0.13, N = 9
11.58
Odroid XU4 SanDisk A2
SE +/- 0.00, N = 3
21.20
140
280
420
560
700
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

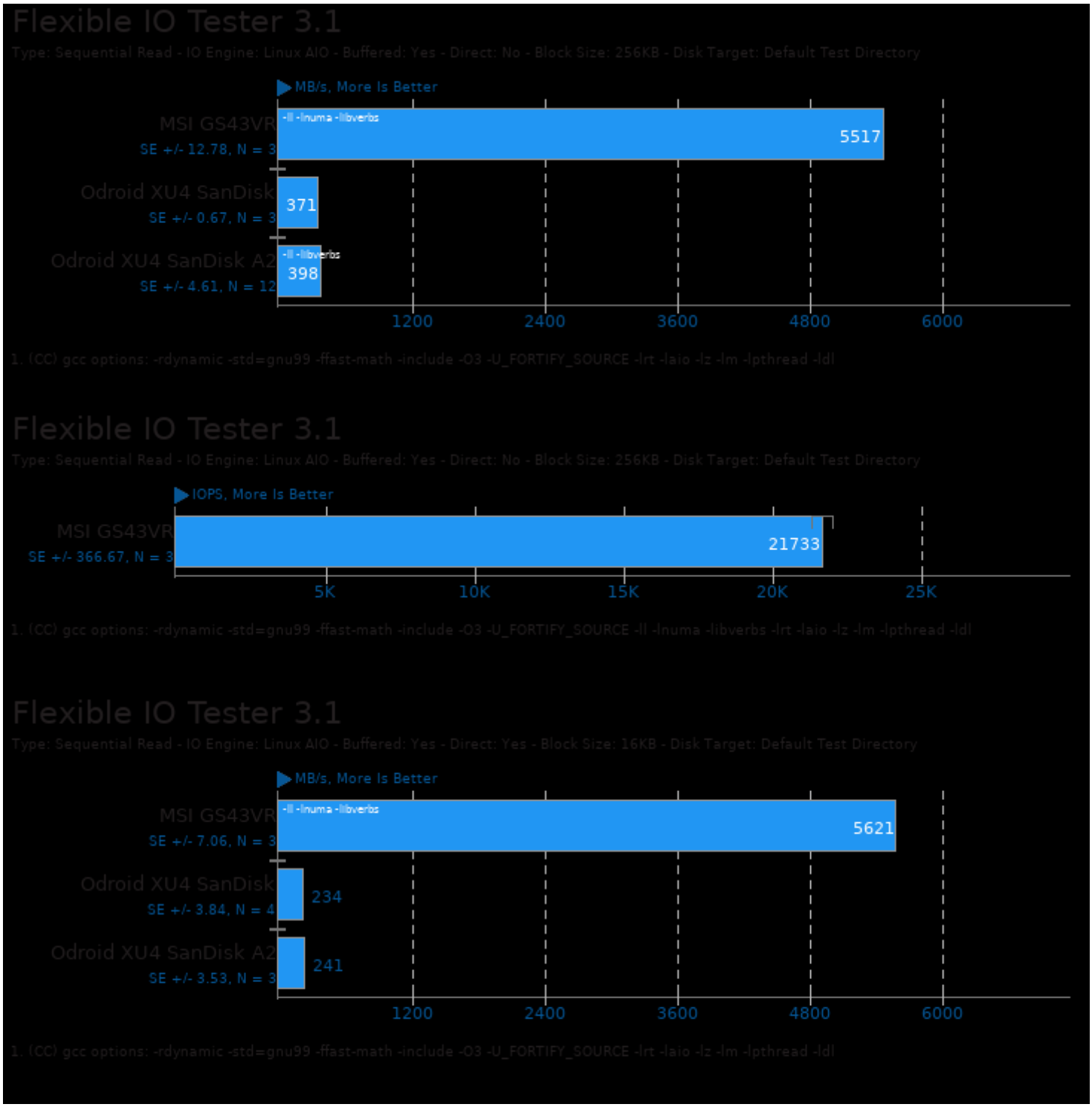
# HD+Crypto

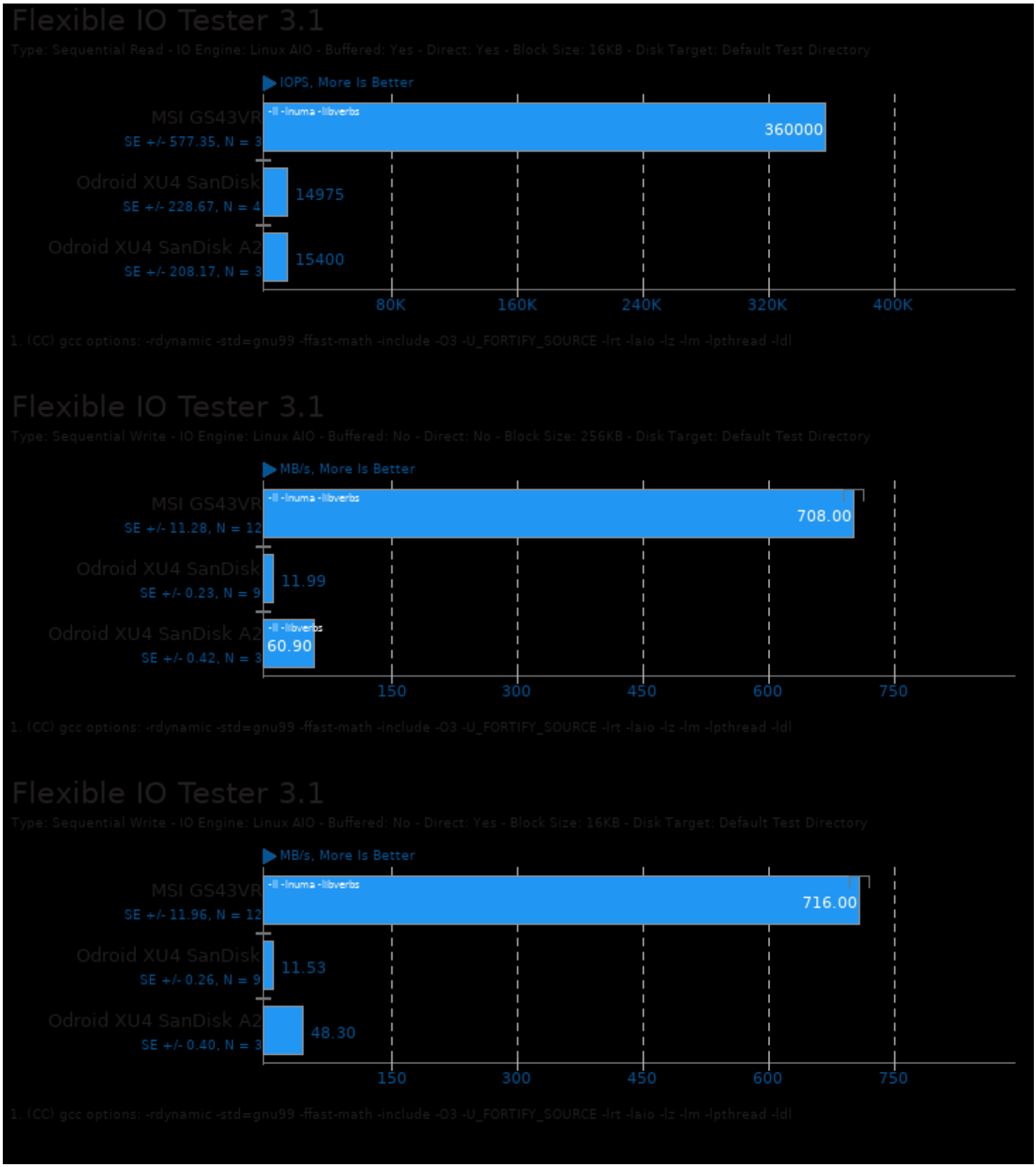

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 2486.33, N = 12
164000
40K
80K
120K
160K
200K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 23.11, N = 9
-ll -lnuma -libverbs
689.00
Odroid XU4 SanDisk
SE +/- 0.03, N = 3
24.23
Odroid XU4 SanDisk A2
SE +/- 0.17, N = 3
-ll -libverbs
77.20
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 48.61, N = 12
-ll -lnuma -libverbs
2037.00
Odroid XU4 SanDisk
SE +/- 0.19, N = 3
12.37
Odroid XU4 SanDisk A2
SE +/- 0.74, N = 3
56.07
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

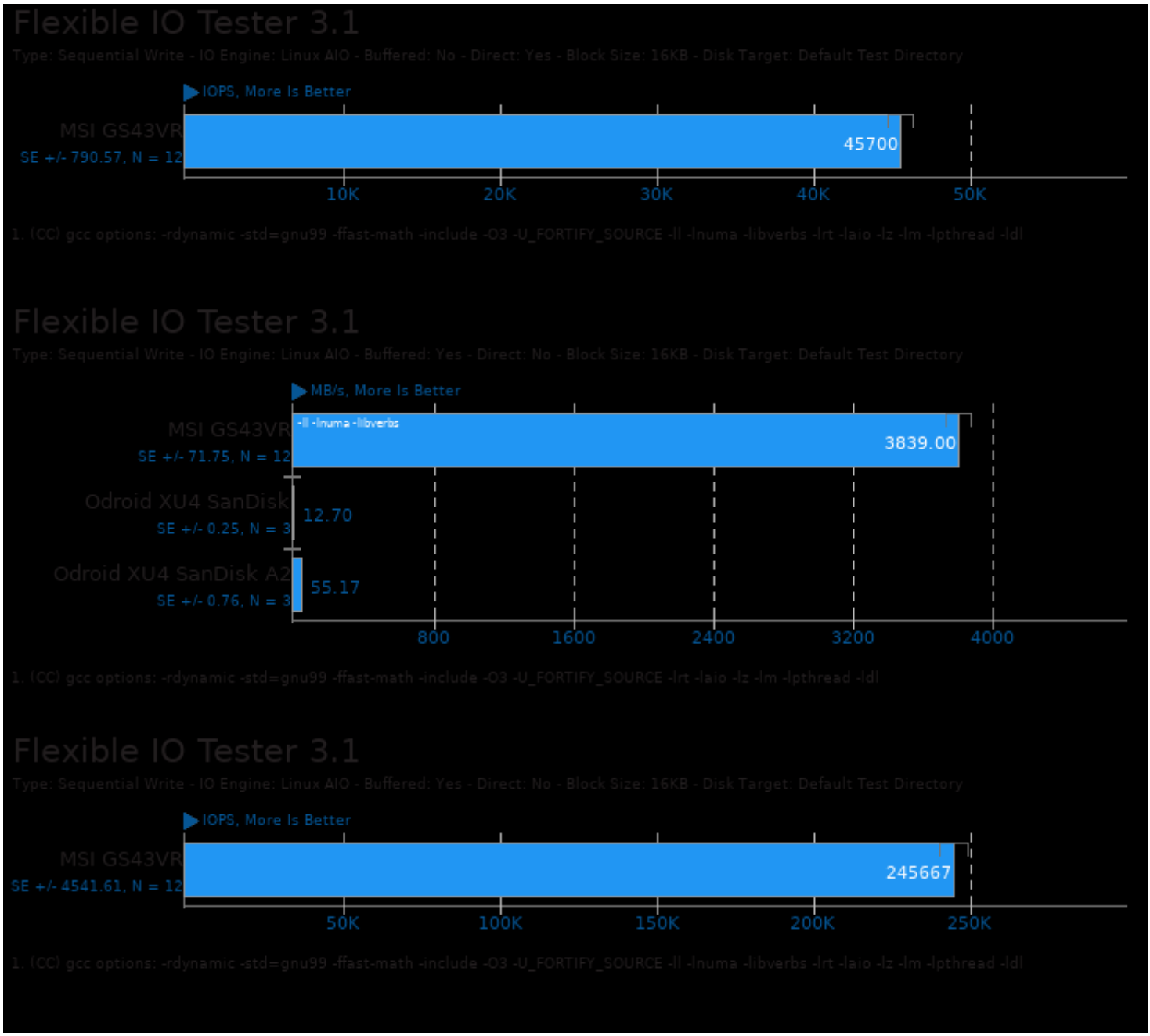
# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 12500.61, N = 12
-lnuma
521500
Odroid XU4 SanDisk A2
SE +/- 517.47, N = 3
14033
110K
220K
330K
440K
550K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 67.59, N = 11
-ll -lnuma -libverbs
3680.00
Odroid XU4 SanDisk
SE +/- 0.22, N = 3
36.73
Odroid XU4 SanDisk A2
SE +/- 0.58, N = 3
79.57
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
1684.00
Odroid XU4 SanDisk
SE +/- 0.09, N = 3
78.63
Odroid XU4 SanDisk A2
SE +/- 0.28, N = 3
82.57
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

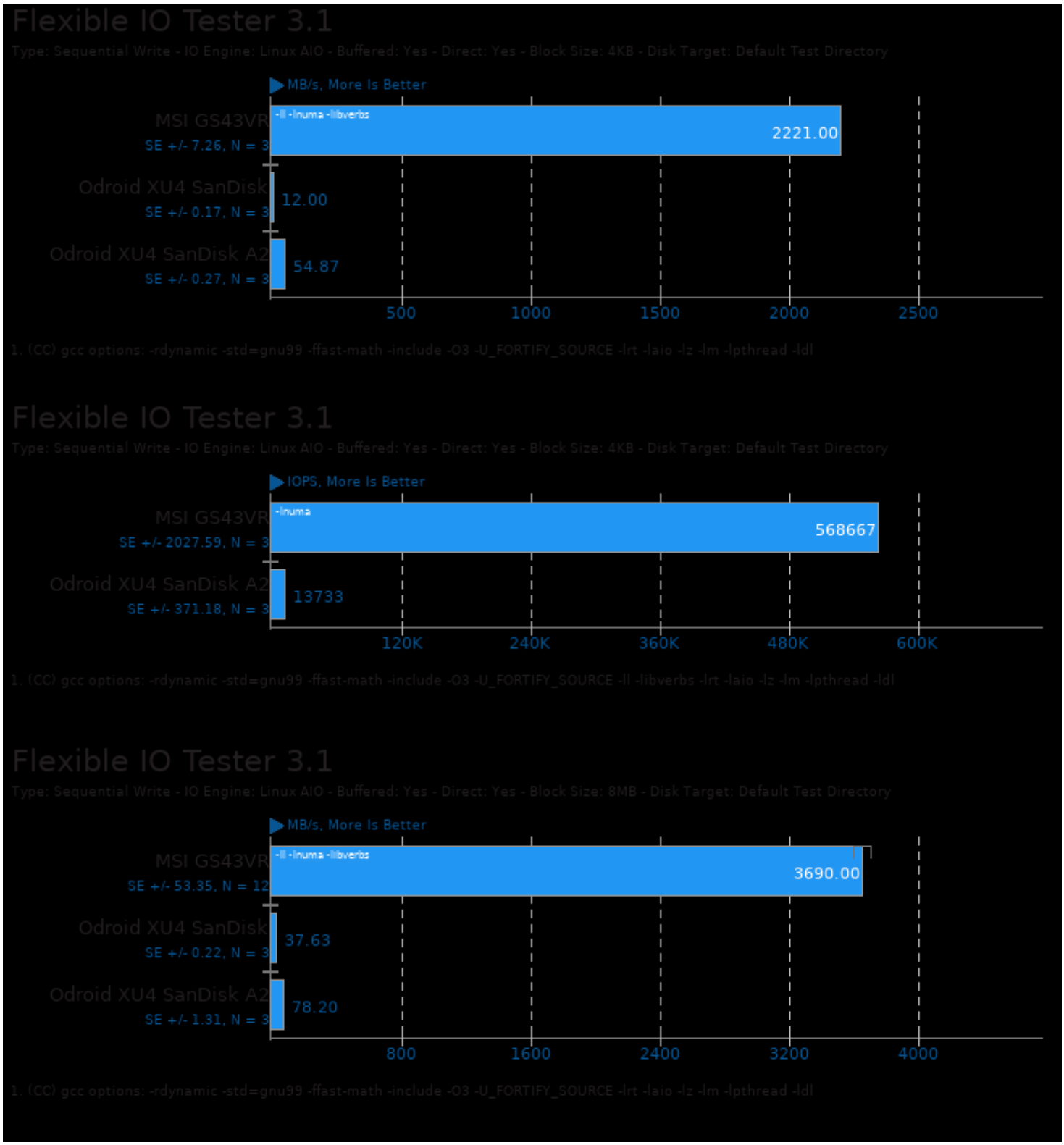
# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 12.78, N = 3
-ll -lnuma -libverbs
5517
Odroid XU4 SanDisk
SE +/- 0.67, N = 3
371
Odroid XU4 SanDisk A2
SE +/- 4.61, N = 12
-ll -libverbs
398
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 366.67, N = 3
21733
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 7.06, N = 3
-ll -lnuma -libverbs
5621
Odroid XU4 SanDisk
SE +/- 3.84, N = 4
234
Odroid XU4 SanDisk A2
SE +/- 3.53, N = 3
241
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

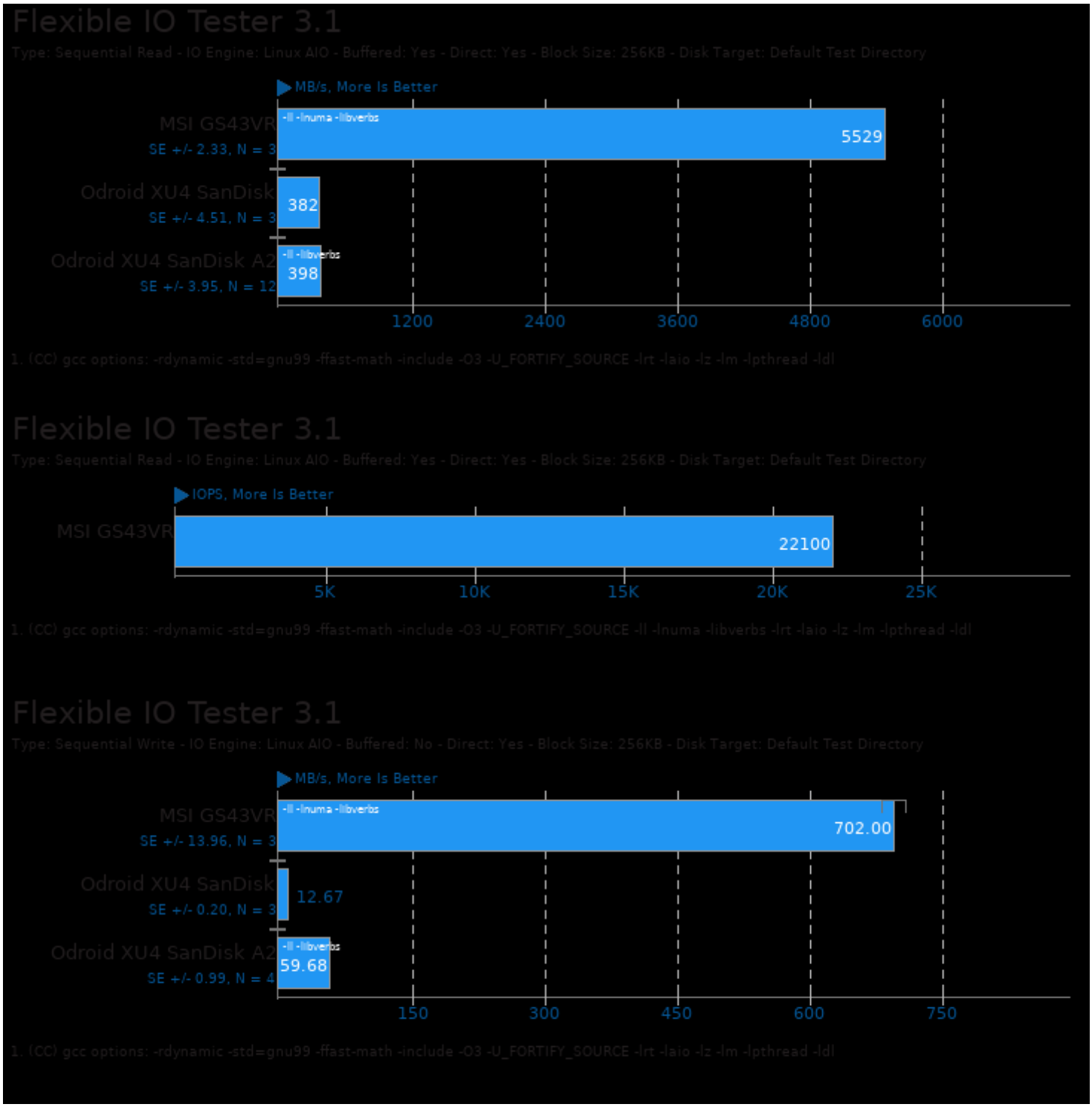

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 577.35, N = 3
-ll -lnuma -libverbs
360000
Odroid XU4 SanDisk
SE +/- 228.67, N = 4
14975
Odroid XU4 SanDisk A2
SE +/- 208.17, N = 3
15400
80K
160K
240K
320K
400K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 11.28, N = 12
-ll -lnuma -libverbs
708.00
Odroid XU4 SanDisk
SE +/- 0.23, N = 9
11.99
Odroid XU4 SanDisk A2
SE +/- 0.42, N = 3
-ll -libverbs
60.90
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 11.96, N = 12
-ll -lnuma -libverbs
716.00
Odroid XU4 SanDisk
SE +/- 0.26, N = 9
11.53
Odroid XU4 SanDisk A2
SE +/- 0.40, N = 3
48.30
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 790.57, N = 12
45700
10K
20K
30K
40K
50K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 71.75, N = 12
3839.00
Odroid XU4 SanDisk
SE +/- 0.25, N = 3
12.70
Odroid XU4 SanDisk A2
SE +/- 0.76, N = 3
55.17
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 4541.61, N = 12
245667
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

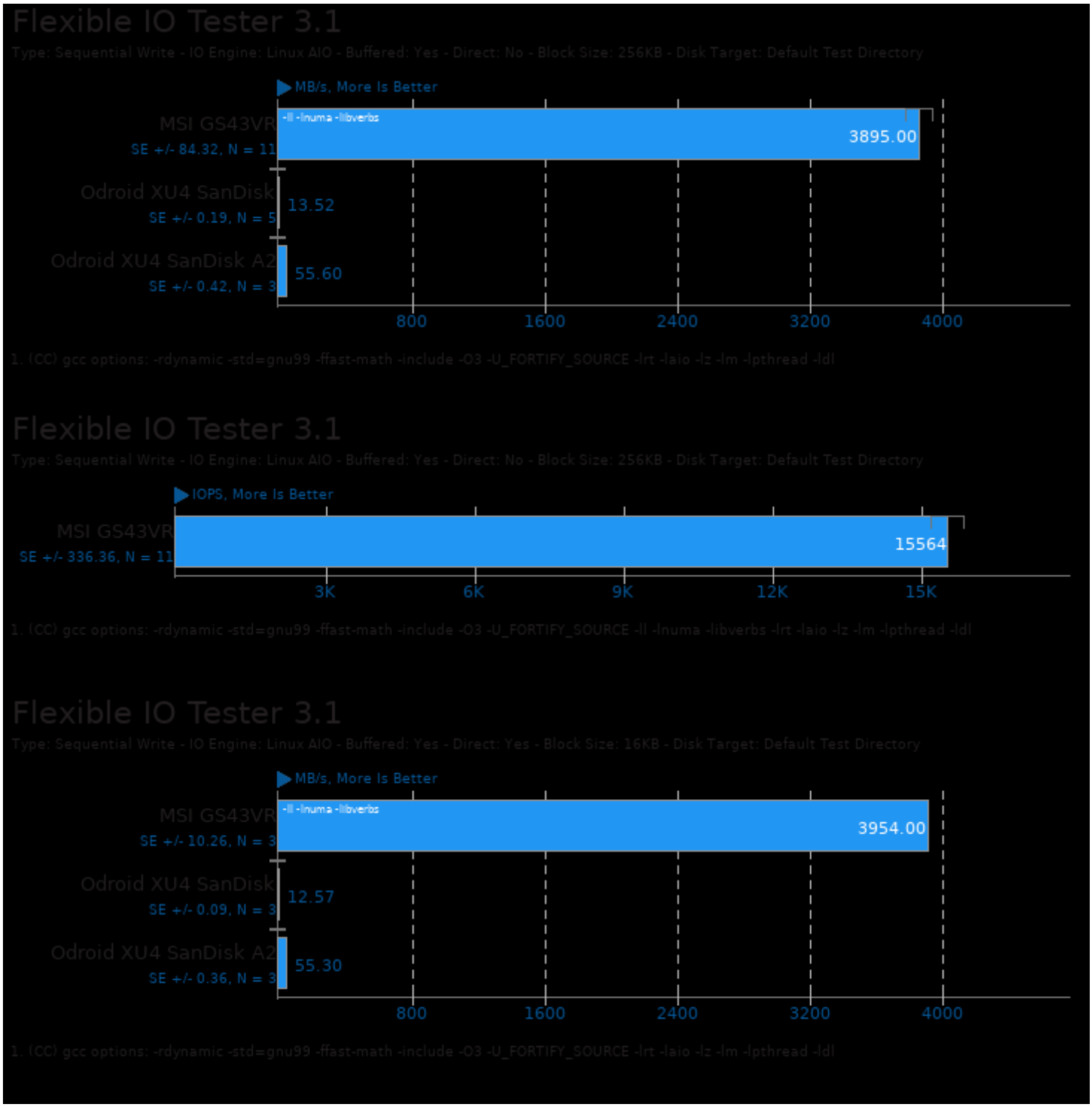
# HD+Crypto

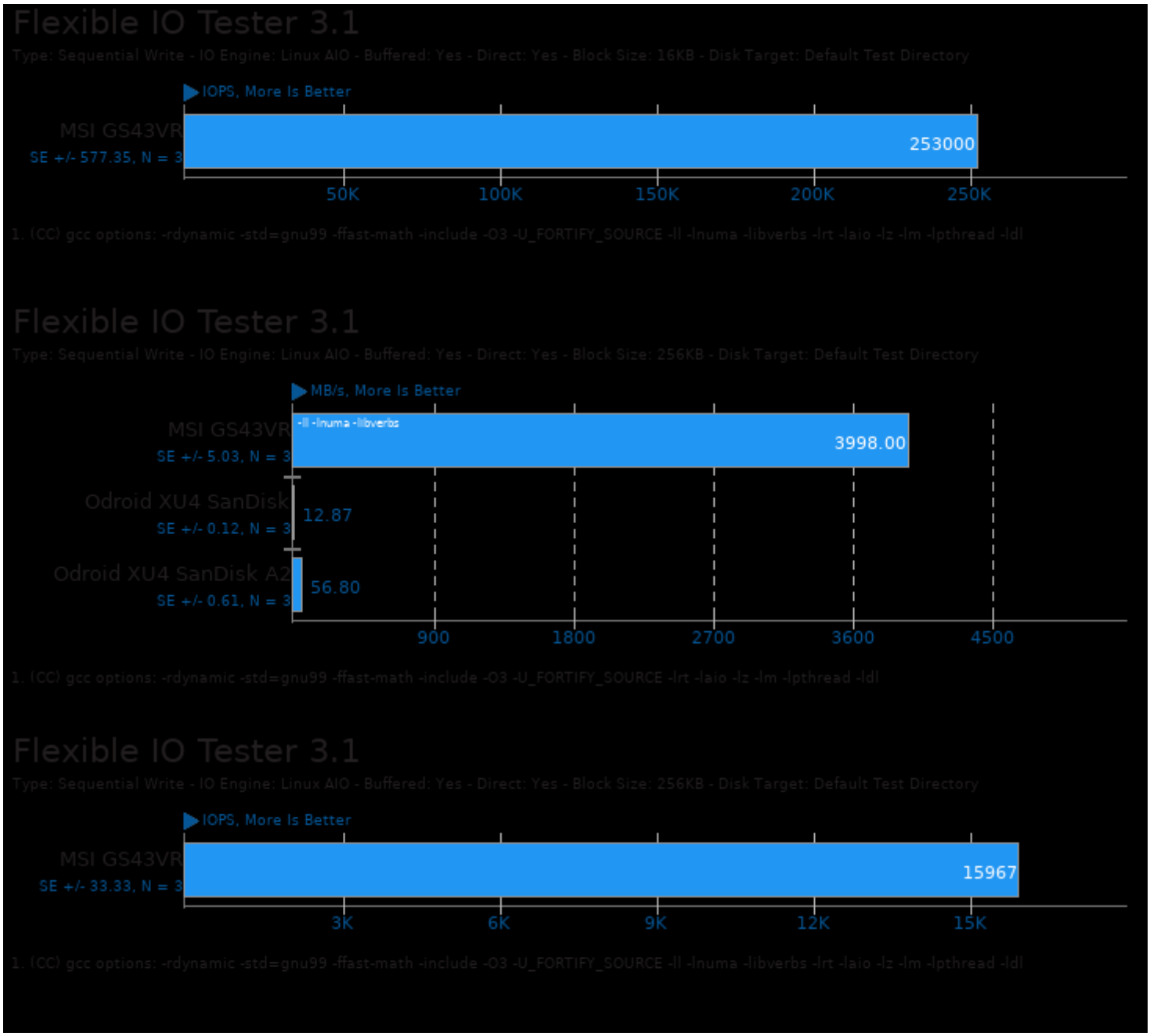

Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 7.26, N = 3
-ll -lnuma -libverbs
2221.00
Odroid XU4 SanDisk
SE +/- 0.17, N = 3
12.00
Odroid XU4 SanDisk A2
SE +/- 0.27, N = 3
54.87
500
1000
1500
2000
2500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 2027.59, N = 3
-lnuma
568667
Odroid XU4 SanDisk A2
SE +/- 371.18, N = 3
13733
120K
240K
360K
480K
600K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 53.35, N = 12
-ll -lnuma -libverbs
3690.00
Odroid XU4 SanDisk
SE +/- 0.22, N = 3
37.63
Odroid XU4 SanDisk A2
SE +/- 1.31, N = 3
78.20
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto

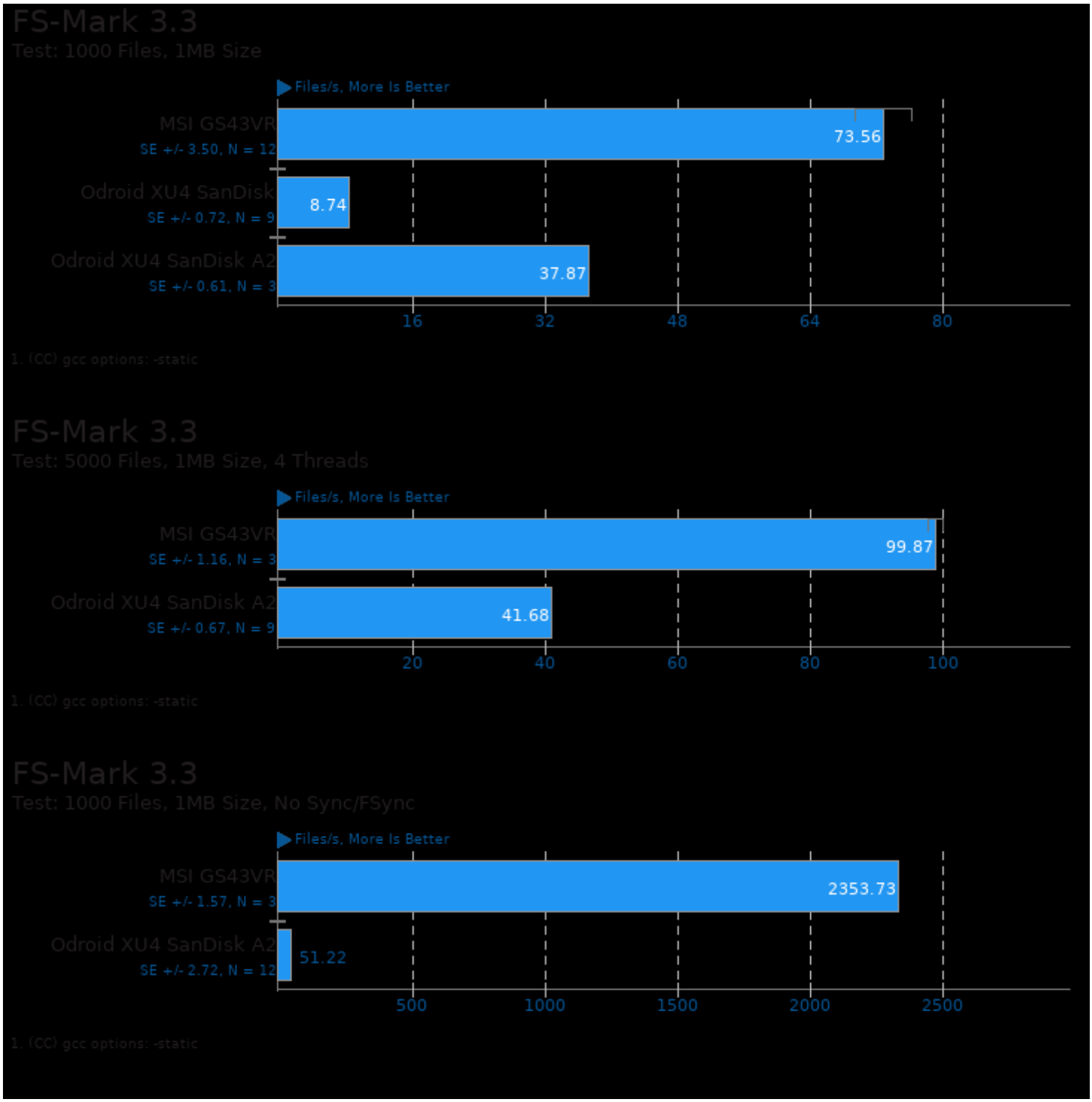

Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 2.33, N = 3
-ll -lnuma -libverbs
5529
Odroid XU4 SanDisk
SE +/- 4.51, N = 3
382
Odroid XU4 SanDisk A2
SE +/- 3.95, N = 12
-ll -libverbs
398
1200
2400
3600
4800
6000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Read - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
22100
5K
10K
15K
20K
25K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 13.96, N = 3
-ll -lnuma -libverbs
702.00
Odroid XU4 SanDisk
SE +/- 0.20, N = 3
12.67
Odroid XU4 SanDisk A2
SE +/- 0.99, N = 4
-ll -libverbs
59.68
150
300
450
600
750
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl

# HD+Crypto


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 84.32, N = 11
-ll -lnuma -libverbs
3895.00
Odroid XU4 SanDisk
SE +/- 0.19, N = 5
13.52
Odroid XU4 SanDisk A2
SE +/- 0.42, N = 3
55.60
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: No - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 336.36, N = 11
15564
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
SE +/- 10.26, N = 3
-ll -lnuma -libverbs
3954.00
Odroid XU4 SanDisk
SE +/- 0.09, N = 3
12.57
Odroid XU4 SanDisk A2
SE +/- 0.36, N = 3
55.30
800
1600
2400
3200
4000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl


Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 16KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 577.35, N = 3
253000
50K
100K
150K
200K
250K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
MB/s, More Is Better
MSI GS43VR
-ll -lnuma -libverbs
SE +/- 5.03, N = 3
3998.00
Odroid XU4 SanDisk
SE +/- 0.12, N = 3
12.87
Odroid XU4 SanDisk A2
SE +/- 0.61, N = 3
56.80
900
1800
2700
3600
4500
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -lrt -laio -lz -lm -lpthread -ldl
Flexible IO Tester 3.1
Type: Sequential Write - IO Engine: Linux AIO - Buffered: Yes - Direct: Yes - Block Size: 256KB - Disk Target: Default Test Directory
IOPS, More Is Better
MSI GS43VR
SE +/- 33.33, N = 3
15967
3K
6K
9K
12K
15K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lm -lpthread -ldl

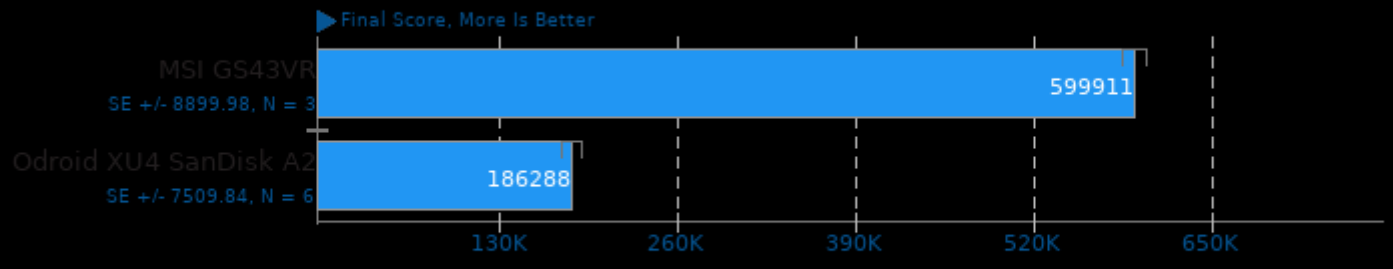
# HD+Crypto


FS-Mark 3.3
Test: 1000 Files, 1MB Size
Files/s, More Is Better
MSI GS43VR
SE +/- 3.50, N = 12
73.56
Odroid XU4 SanDisk
SE +/- 0.72, N = 9
8.74
Odroid XU4 SanDisk A2
SE +/- 0.61, N = 3
37.87
16
32
48
64
80
1. (CC) gcc options: -static
FS-Mark 3.3
Test: 5000 Files, 1MB Size, 4 Threads
Files/s, More Is Better
MSI GS43VR
SE +/- 1.16, N = 3
99.87
Odroid XU4 SanDisk A2
SE +/- 0.67, N = 9
41.68
20
40
60
80
100
1. (CC) gcc options: -static
FS-Mark 3.3
Test: 1000 Files, 1MB Size, No Sync/FSync
Files/s, More Is Better
MSI GS43VR
SE +/- 1.57, N = 3
2353.73
Odroid XU4 SanDisk A2
SE +/- 2.72, N = 12
51.22
500
1000
1500
2000
2500
1. (CC) gcc options: -static

# HD+Crypto

## BlogBench 1.0

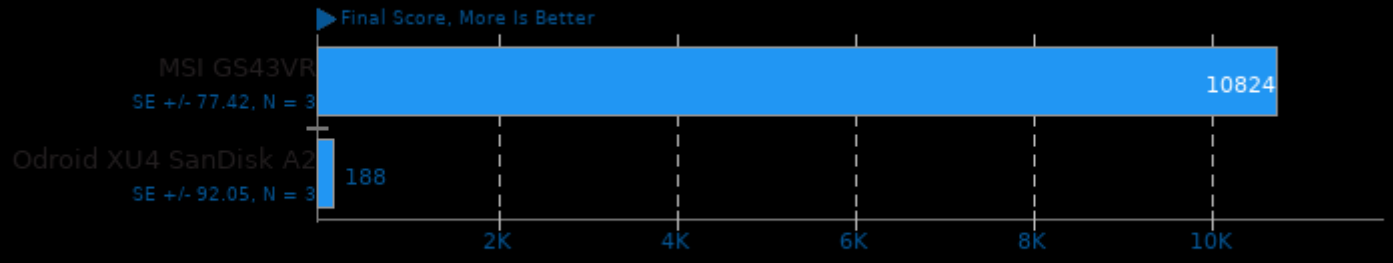
Test: Read




1. (CC) gcc options: -O2 -pthread

## BlogBench 1.0

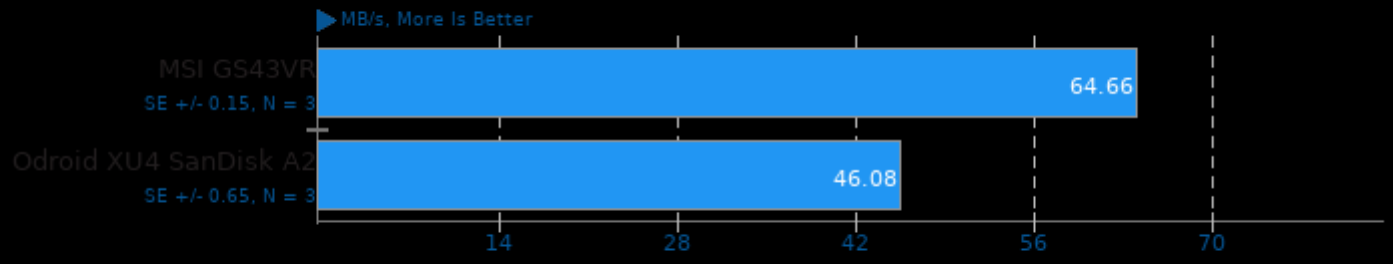
Test: Write




1. (CC) gcc options: -O2 -pthread

## Dbench 4.0

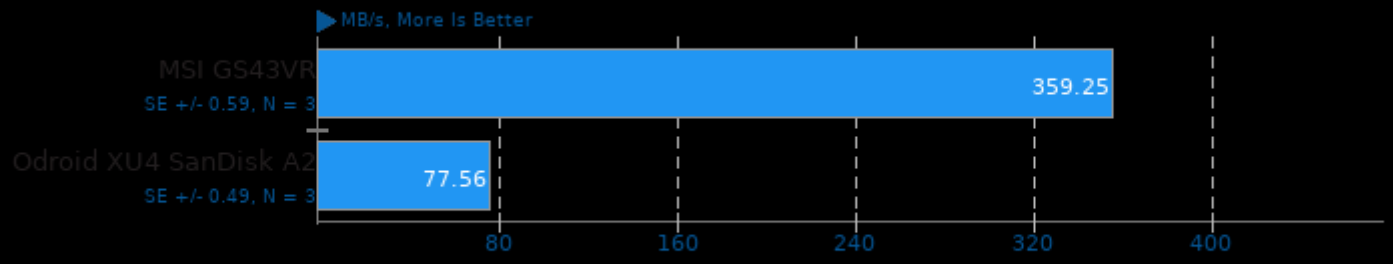
Client Count: 1




1. (CC) gcc options: -lpopt -O2

## Dbench 4.0

Client Count: 12

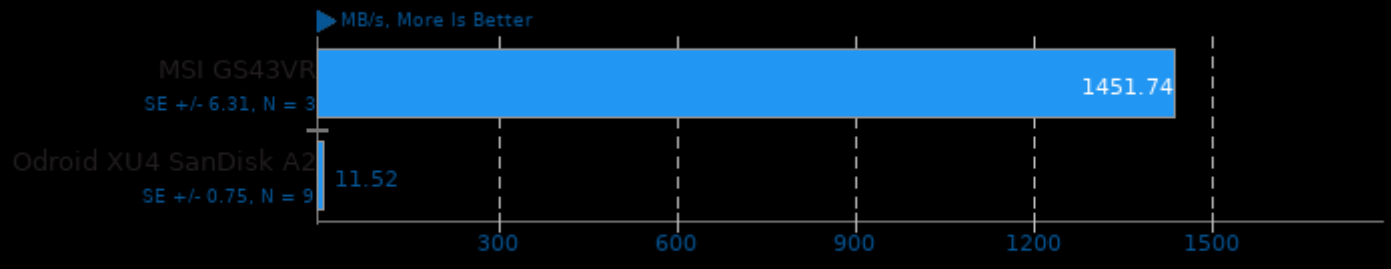



1. (CC) gcc options: -lpopt -O2

# HD+Crypto

## Dbench 4.0

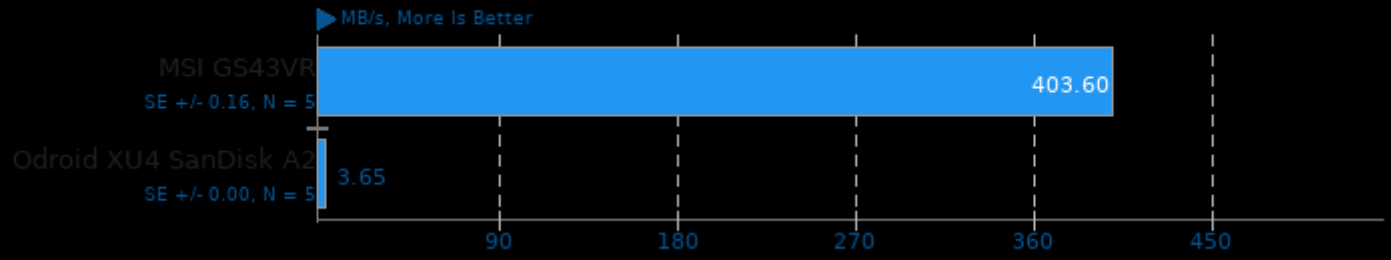
Client Count: 256




1. (CC) gcc options: -lpopt -O2

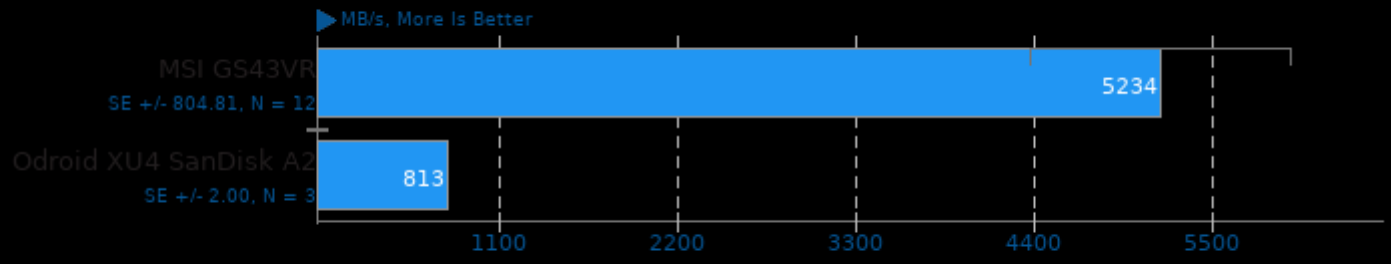
## hdparm Timed Disk Reads

Disk To Read: /dev/sda




## IOzone 3.465

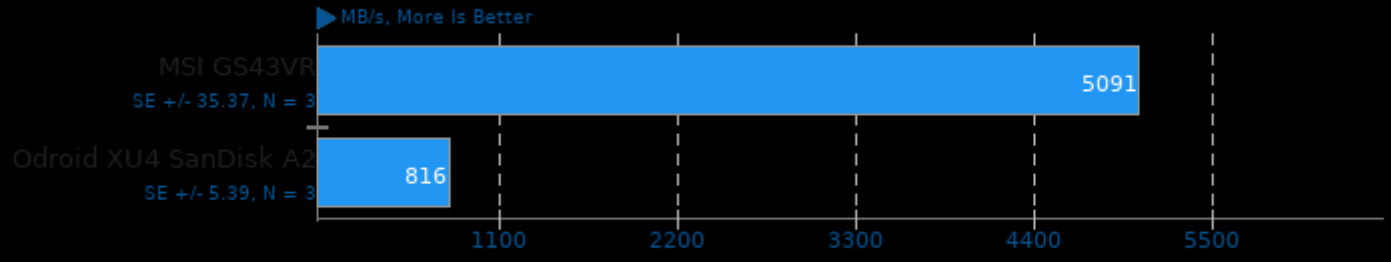
Record Size: 1MB - File Size: 512MB - Disk Test: Read Performance




1. (CC) gcc options: -O3

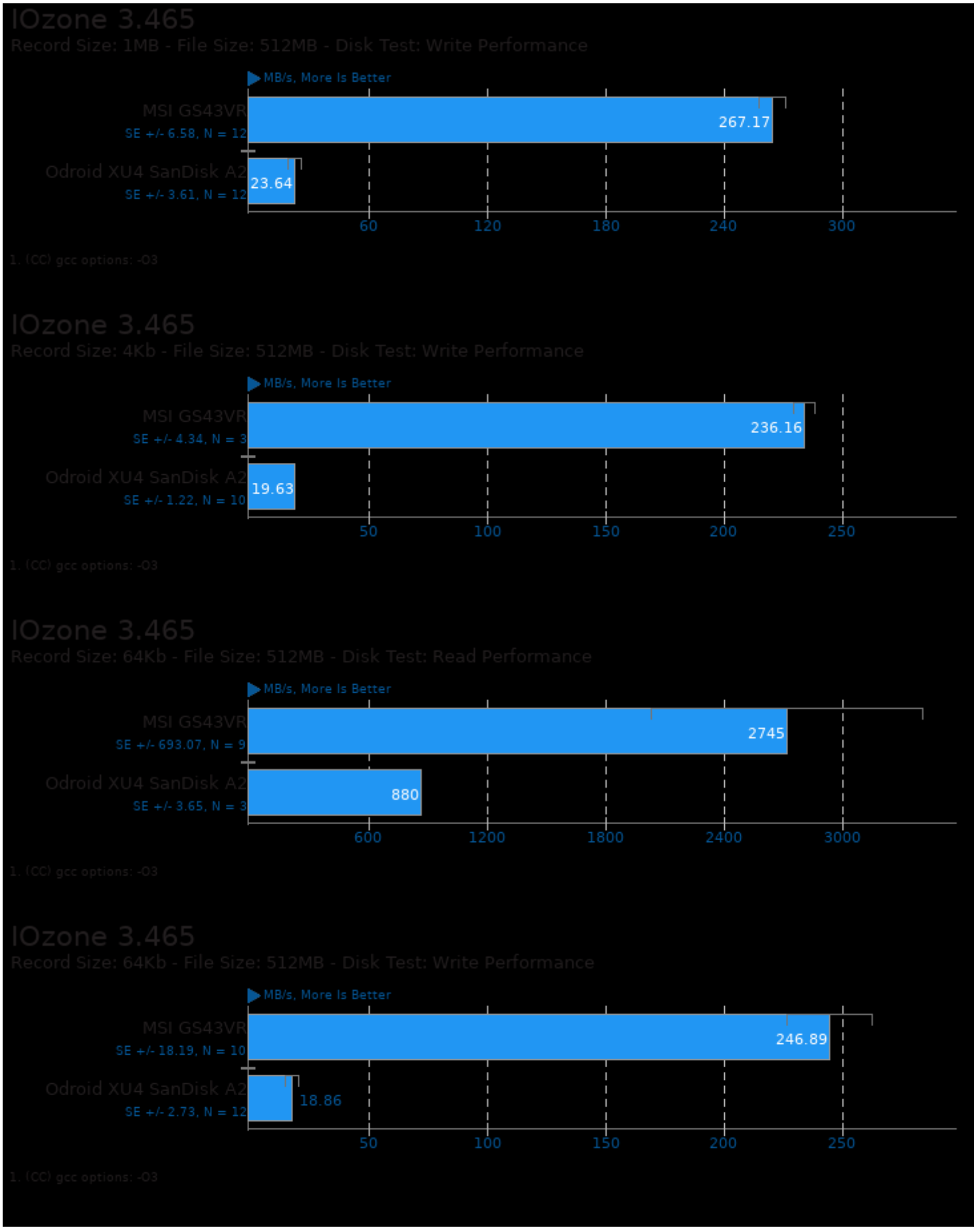
## IOzone 3.465

Record Size: 4Kb - File Size: 512MB - Disk Test: Read Performance

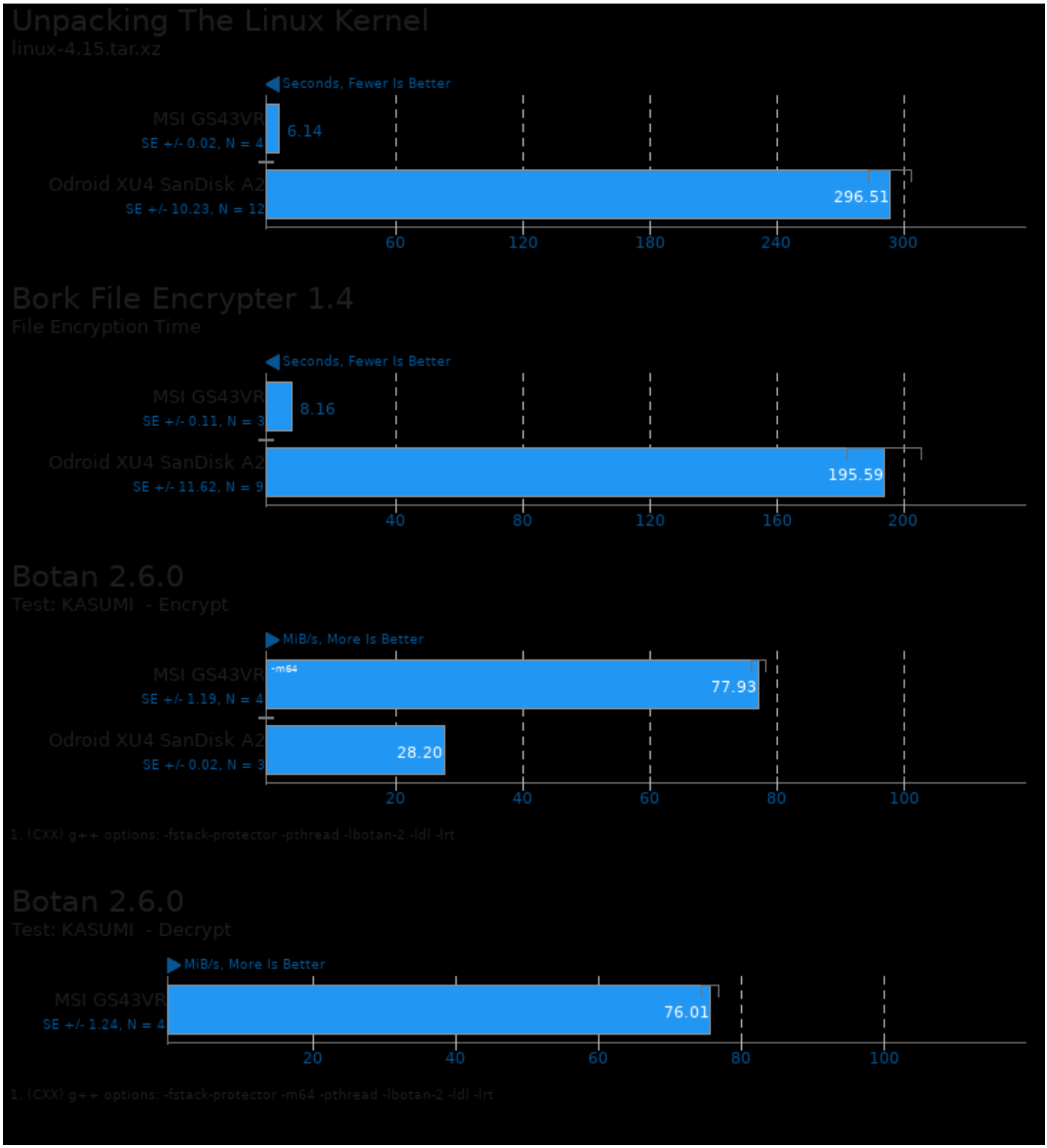



1. (CC) gcc options: -O3

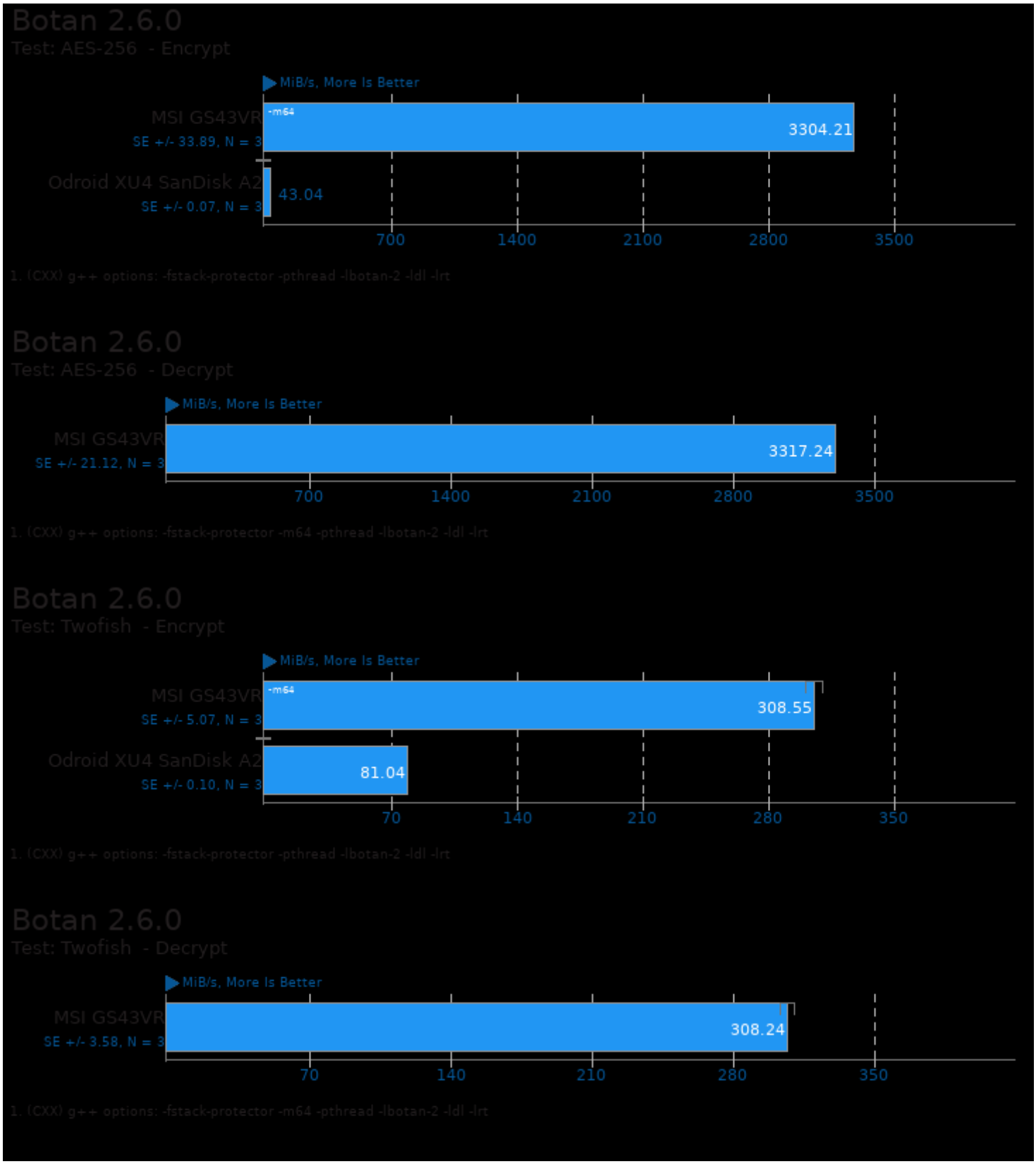
# HD+Crypto

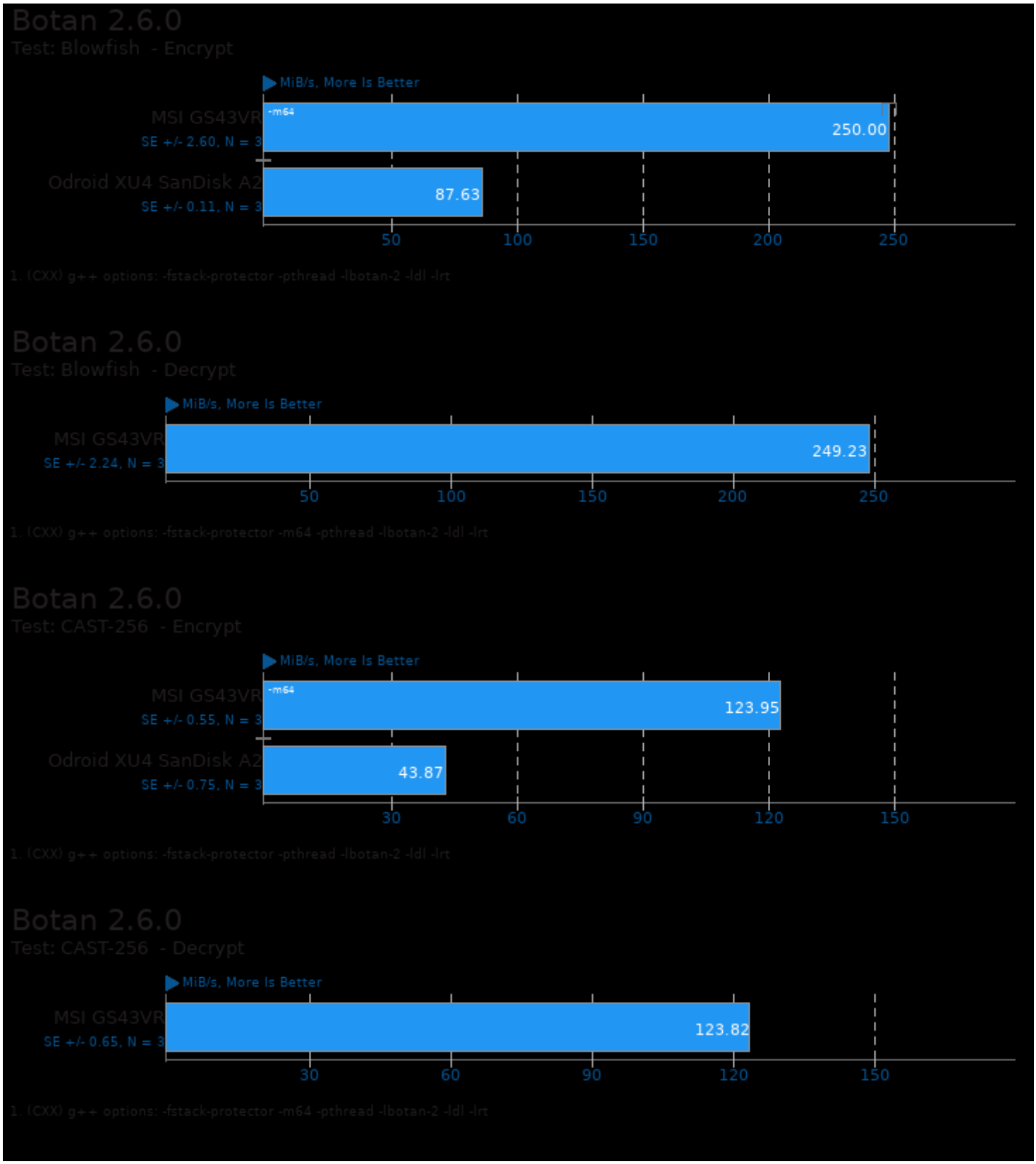

IOzone 3.465
Record Size: 1MB - File Size: 512MB - Disk Test: Write Performance
MB/s, More Is Better
MSI GS43VR
SE +/- 6.58, N = 12
267.17
Odroid XU4 SanDisk A2
SE +/- 3.61, N = 12
23.64
60
120
180
240
300
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 4Kb - File Size: 512MB - Disk Test: Write Performance
MB/s, More Is Better
MSI GS43VR
SE +/- 4.34, N = 3
236.16
Odroid XU4 SanDisk A2
SE +/- 1.22, N = 10
19.63
50
100
150
200
250
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 64Kb - File Size: 512MB - Disk Test: Read Performance
MB/s, More Is Better
MSI GS43VR
SE +/- 693.07, N = 9
2745
Odroid XU4 SanDisk A2
SE +/- 3.65, N = 3
880
600
1200
1800
2400
3000
1. (CC) gcc options: -O3
IOzone 3.465
Record Size: 64Kb - File Size: 512MB - Disk Test: Write Performance
MB/s, More Is Better
MSI GS43VR
SE +/- 18.19, N = 10
246.89
Odroid XU4 SanDisk A2
SE +/- 2.73, N = 12
18.86
50
100
150
200
250
1. (CC) gcc options: -O3

# HD+Crypto

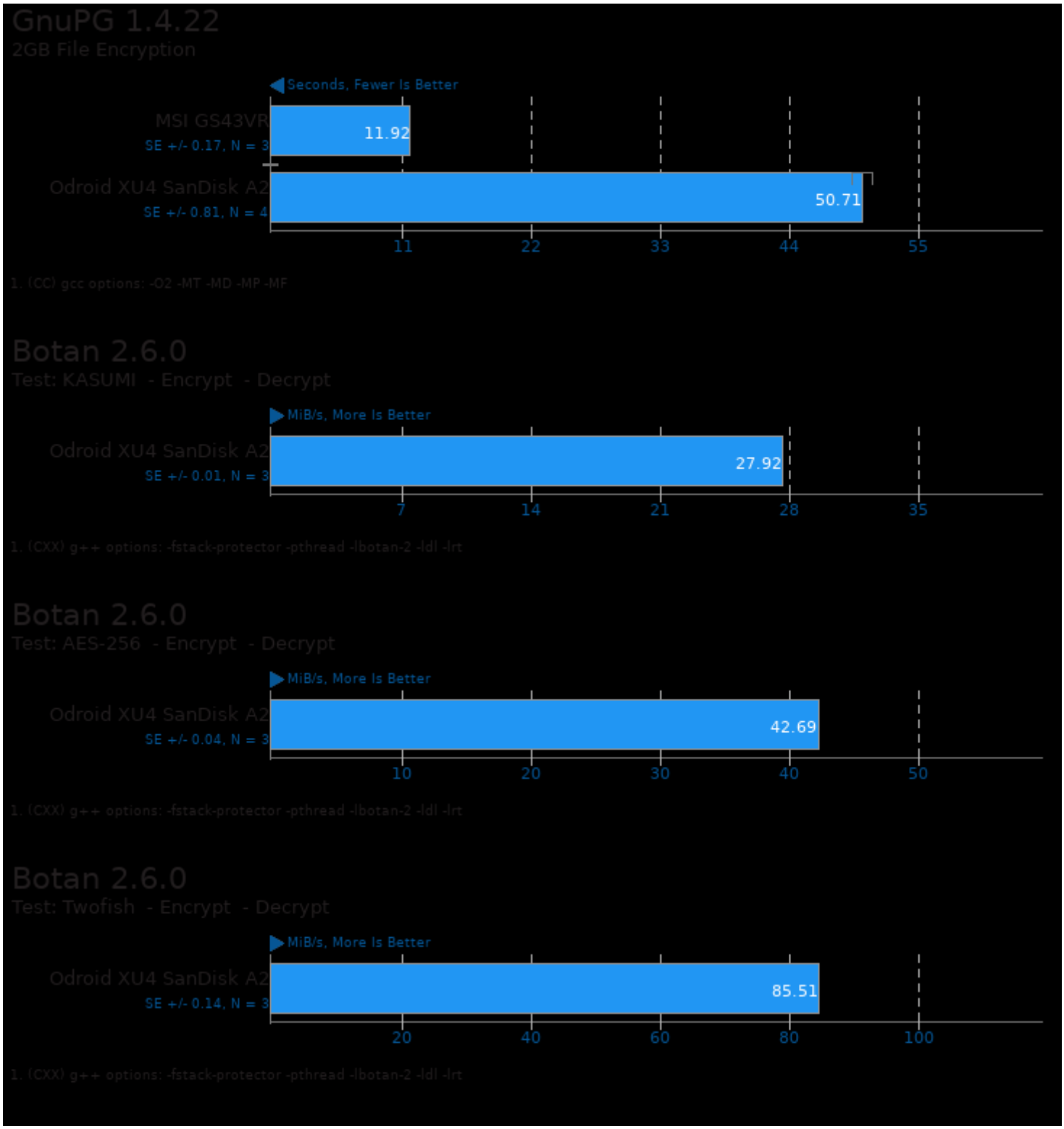

Unpacking The Linux Kernel
linux-4.15.tar.xz
Seconds, Fewer Is Better
MSI GS43VR
SE +/- 0.02, N = 4
6.14
Odroid XU4 SanDisk A2
SE +/- 10.23, N = 12
296.51
60
120
180
240
300
Bork File Encrypter 1.4
File Encryption Time
Seconds, Fewer Is Better
MSI GS43VR
SE +/- 0.11, N = 3
8.16
Odroid XU4 SanDisk A2
SE +/- 11.62, N = 9
195.59
40
80
120
160
200
Botan 2.6.0
Test: KASUMI - Encrypt
MiB/s, More Is Better
MSI GS43VR
-m64
SE +/- 1.19, N = 4
77.93
Odroid XU4 SanDisk A2
SE +/- 0.02, N = 3
28.20
20
40
60
80
100
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: KASUMI - Decrypt
MiB/s, More Is Better
MSI GS43VR
SE +/- 1.24, N = 4
76.01
20
40
60
80
100
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

# HD+Crypto

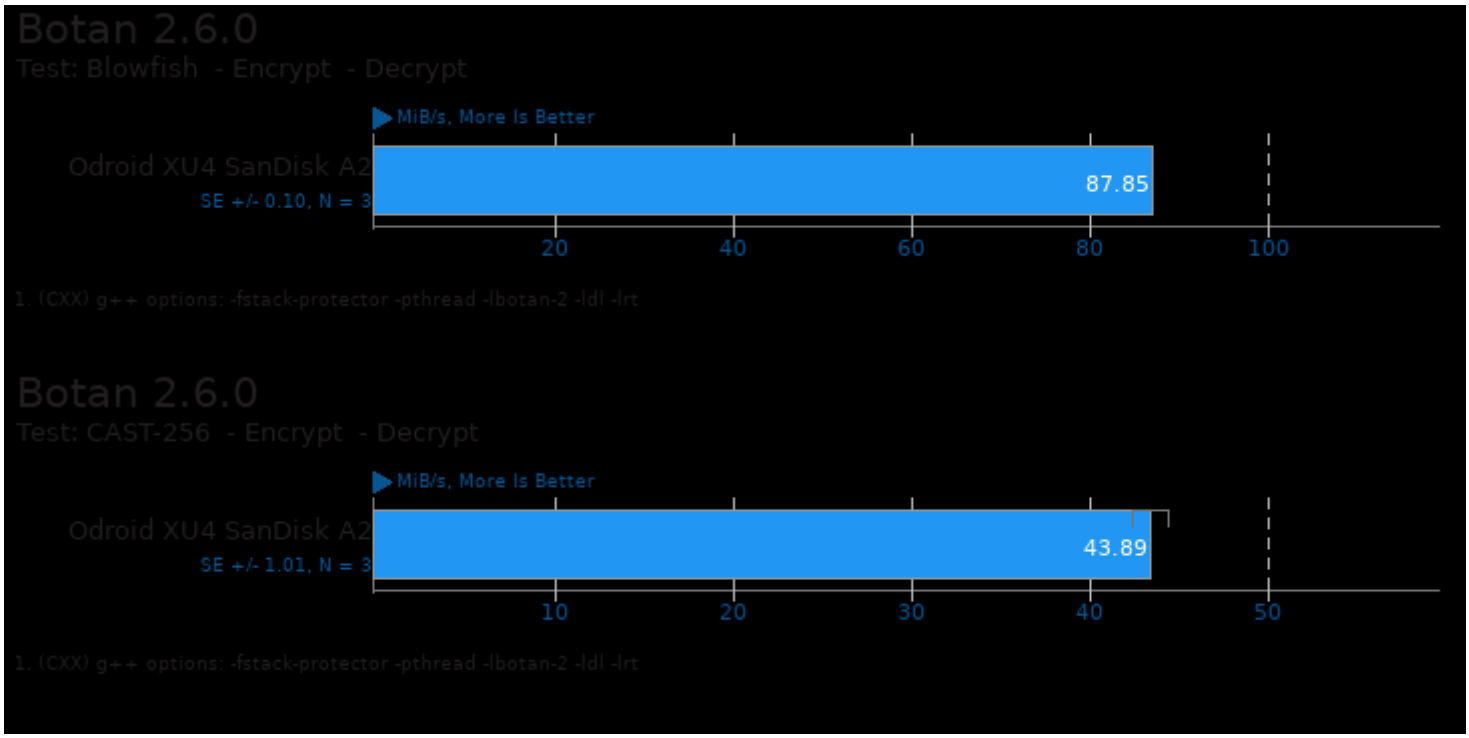

Botan 2.6.0
Test: AES-256 - Encrypt
MiB/s, More Is Better
MSI GS43VR
-m64
SE +/- 33.89, N = 3
3304.21
Odroid XU4 SanDisk A2
SE +/- 0.07, N = 3
43.04
700
1400
2100
2800
3500
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: AES-256 - Decrypt
MiB/s, More Is Better
MSI GS43VR
SE +/- 21.12, N = 3
3317.24
700
1400
2100
2800
3500
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: Twofish - Encrypt
MiB/s, More Is Better
MSI GS43VR
-m64
SE +/- 5.07, N = 3
308.55
Odroid XU4 SanDisk A2
SE +/- 0.10, N = 3
81.04
70
140
210
280
350
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: Twofish - Decrypt
MiB/s, More Is Better
MSI GS43VR
SE +/- 3.58, N = 3
308.24
70
140
210
280
350
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt


Botan 2.6.0
Test: Blowfish - Encrypt
MiB/s, More Is Better
MSI GS43VR
-m64
SE +/- 2.60, N = 3
250.00
Odroid XU4 SanDisk A2
SE +/- 0.11, N = 3
87.63
50
100
150
200
250
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: Blowfish - Decrypt
MiB/s, More Is Better
MSI GS43VR
SE +/- 2.24, N = 3
249.23
50
100
150
200
250
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: CAST-256 - Encrypt
MiB/s, More Is Better
MSI GS43VR
-m64
SE +/- 0.55, N = 3
123.95
Odroid XU4 SanDisk A2
SE +/- 0.75, N = 3
43.87
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: CAST-256 - Decrypt
MiB/s, More Is Better
MSI GS43VR
SE +/- 0.65, N = 3
123.82
30
60
90
120
150
1. (CXX) g++ options: -fstack-protector -m64 -pthread -lbotan-2 -ldl -lrt

# HD+Crypto


GnuPG 1.4.22
2GB File Encryption
Seconds, Fewer Is Better
MSI GS43VR
SE +/- 0.17, N = 3
11.92
Odroid XU4 SanDisk A2
SE +/- 0.81, N = 4
50.71
11
22
33
44
55
1. (CC) gcc options: -O2 -MT -MD -MP -MF
Botan 2.6.0
Test: KASUMI - Encrypt - Decrypt
MiB/s, More Is Better
Odroid XU4 SanDisk A2
SE +/- 0.01, N = 3
27.92
7
14
21
28
35
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: AES-256 - Encrypt - Decrypt
MiB/s, More Is Better
Odroid XU4 SanDisk A2
SE +/- 0.04, N = 3
42.69
10
20
30
40
50
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: Twofish - Encrypt - Decrypt
MiB/s, More Is Better
Odroid XU4 SanDisk A2
SE +/- 0.14, N = 3
85.51
20
40
60
80
100
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt

# HD+Crypto


Botan 2.6.0
Test: Blowfish - Encrypt - Decrypt
MiB/s, More Is Better
Odroid XU4 SanDisk A2
SE +/- 0.10, N = 3
87.85
20
40
60
80
100
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt
Botan 2.6.0
Test: CAST-256 - Encrypt - Decrypt
MiB/s, More Is Better
Odroid XU4 SanDisk A2
SE +/- 1.01, N = 3
43.89
10
20
30
40
50
1. (CXX) g++ options: -fstack-protector -pthread -lbotan-2 -ldl -lrt

# HD+Crypto

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




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

*This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 05:47.*