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JS-E02_AX720_R32_3_1

ARMv8 rev 0 testing with a Jetson-AGX and NVIDIA Tegra Xavier on Ubuntu 18.04 via the Phoronix Test Suite.

Automated Executive Summary

Digifusion M.2 SSD had the most wins, coming in first place for 50% of the tests.

The results with the greatest spread from best to worst included:

Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 567.322x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 542.673x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 94.257x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 71.333x
Flexible IO Tester (Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 50.5x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory) at 33.061x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk

Target: Default Test Directory) at 11.824x
Flexible IO Tester (Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory) at 11.809x
Stress-NG (Test: CPU Stress) at 1.017x
Stress-NG (Test: Forking) at 1.015x.

Test Systems:

eMMC

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 62GB Ultra USB 3.0 + 31GB HBG4a2, Graphics: NVIDIA TEGRA, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 1.0.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

USB3.0 Innodisk

USB2.0 Innodisk

SD Card innodisk

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 62GB Ultra USB 3.0 + 31GB HBG4a2, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

mSATA Innodisk

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 63GB M.2 (S80) 3MG2-P + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display

Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: CFQ / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

Digifusion M.2 SSD

Micro AB USB2.0_inno

Type C Digifusion

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

Type C Digifusion run 2

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 256GB Generic + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

Type C DIGFAST

Type C DIGFAST run 2

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 256GB Tech + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display

Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

Type c USB3.0

CPU Stress

CPU Stress run

LPDDR4

CPU-7 Zip

CUDA Test

RS-232UART

Type C NST-205C3-SG

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 62GB Dual Drive + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: PHL 247E6, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Disk Notes: none / data=ordered,relatime,rw
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

LAN 1

LAN 2

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 250GB SSD 970 EVO + 16GB USB Drive 3ME + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: EDIIG0219, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++

--enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

LAN 3

Processor: ARMv8 rev 0 @ 2.27GHz (8 Cores), Motherboard: Jetson-AGX, Memory: 16GB, Disk: 256GB PLEXTOR PX-256M9PeGN + 16GB USB Drive 3ME + 31GB HBG4a2 + 15GB i-TF, Graphics: NVIDIA Tegra Xavier, Monitor: EDIIG0219, Network: 2 x Intel I210

OS: Ubuntu 18.04, Kernel: 4.9.140-tegra (aarch64), Desktop: Unity 7.5.0, Display Server: X Server 1.19.6, Display Driver: NVIDIA 32.3.1, OpenGL: 4.6.0, Vulkan: 1.1.85, Compiler: GCC 7.5.0 + CUDA 10.0, File-System: ext4, Screen Resolution: 1920x1080

Compiler Notes: --build=aarch64-linux-gnu --disable-libquadmath --disable-libquadmath-support --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-fix-cortex-a53-843419 --enable-gnu-unique-object --enable-languages=c,ada,c++,go,d,fortran,objc,obj-c++ --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-nls --enable-plugin --enable-shared --enable-threads=posix --host=aarch64-linux-gnu --program-prefix=aarch64-linux-gnu- --target=aarch64-linux-gnu --with-default-libstdcxx-abi=new --with-gcc-major-version-only -v
Processor Notes: Scaling Governor: tegra_cpufreq schedutil

	eMMC	USB3.0 Innodisk	USB2.0 Innodisk	SD Card innodisk	mSATA Innodisk	Digifusion M.2 SSD	Micro ABUSB2.0_inno	Type C Digifusion	Type C Digifusion run 2	Type C DIGFAST	Type C DIGFAST run 2	Type c USB3.0	CPU Stress	CPU Stress run	LPDDR4	CPU-7Zip	CUDA Test	RS-232 UART	Type C NST-205C3-SG	LAN 1	LAN 2	LAN 3
7-Zip Compression - C.S.T (MIPS)																20072						
Standard Deviation																3%						
CUDA Mini-Nbody - Original ((NBody^2)/s)																	46.883					
Standard Deviation																	0.1%					

CUDA Mini-Nbody - Cache Blocking ((NBody ^2)/s)	55.558
Standard Deviation	0.4%
CUDA Mini-Nbody - Loop Unrolling ((NBody	54.863
Standard Deviation	0%
CUDA Mini-Nbody - SOA Data Layout ((NBody ^2)/s)	47.752
Standard Deviation	0.1%
CUDA Mini-Nbody - F.D.T.Z ((NBody ^2)/s)	55.142
Standard Deviation	0.1%

JS-E02_AX720_R32_3_1

Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (MB/s)	95.3	97.5	28.3	55.5	194	333	28.2	38.6	305	304	306	111	312
Normalized	28.6%	29.2%	8.5%	16.6%	58.2%	100%	8.47%	11.5%	91.5%	91.2%	91.8%	33.3%	93.6%
Standard Deviation	31.9%	0.7%	1.2%	0.1%	1%	0.6%	0.4%	0.3%	0.4%	0.4%	0.5%	0.9%	0.5%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB (IOPS)	24340	24967	7242	14200	49733	85333	7217	9878	78100	77533	78200	28367	79633
Normalized	28.52%	29.26%	8.49%	16.64%	58.28%	100%	8.46%	11.58%	91.52%	90.86%	91.69%	33.24%	93.32%
Standard Deviation	32%	0.6%	1.1%	4%	0.8%	0.6%	0.4%	0.2%	0.5%	0.7%	0.5%	0.7%	0.8%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (MB/s)	306	121	53.3	102	427	1739	52.6	63.3	822	818	818	169	827
Normalized	17.6%	6.96%	3.06%	5.87%	24.5%	100%	3.02%	3.64%	47.2%	47.0%	47.0%	9.72%	47.5%
Standard Deviation			0.1%			0.8%	1.3%	0.2%	0.1%	0.1%	0.1%		0.1%

JS-E02_AX720_R32_3_1

Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB (IOPS)	35	12	3	9	50	214	3	4	99	99	99	18	100
Normalized	16.36%	5.61%	1.4%	4.21%	23.36%	100%	1.4%	1.87%	46.26%	46.26%	46.26%	8.41%	46.73%
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (MB/s)	81.2	24.7	25.0	21.9	85.5	268	25.1	39.0	0.621	280	281	21.6	337
Normalized	24.09%	7.33%	7.42%	6.5%	25.37%	79.53%	7.45%	11.57%	0.18%	83.09%	83.38%	6.41%	100%
Standard Deviation	0.2%	0.4%	1.2%	1.3%	0.1%	2.1%	1.1%	0.1%	59.4%			11.6%	
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB (IOPS)	20767	6320	6399	5594	21867	68300	6432	9990	152	71700	72067	5566	86233
Normalized	24.08%	7.33%	7.42%	6.49%	25.36%	79.2%	7.46%	11.58%	0.18%	83.15%	83.57%	6.45%	100%
Standard Deviation	0.3%	0.4%	1.2%	1.4%	0.3%	3%	1.2%	0.1%	60.6%	0.1%	0.2%	11.3%	0.1%

| | | |

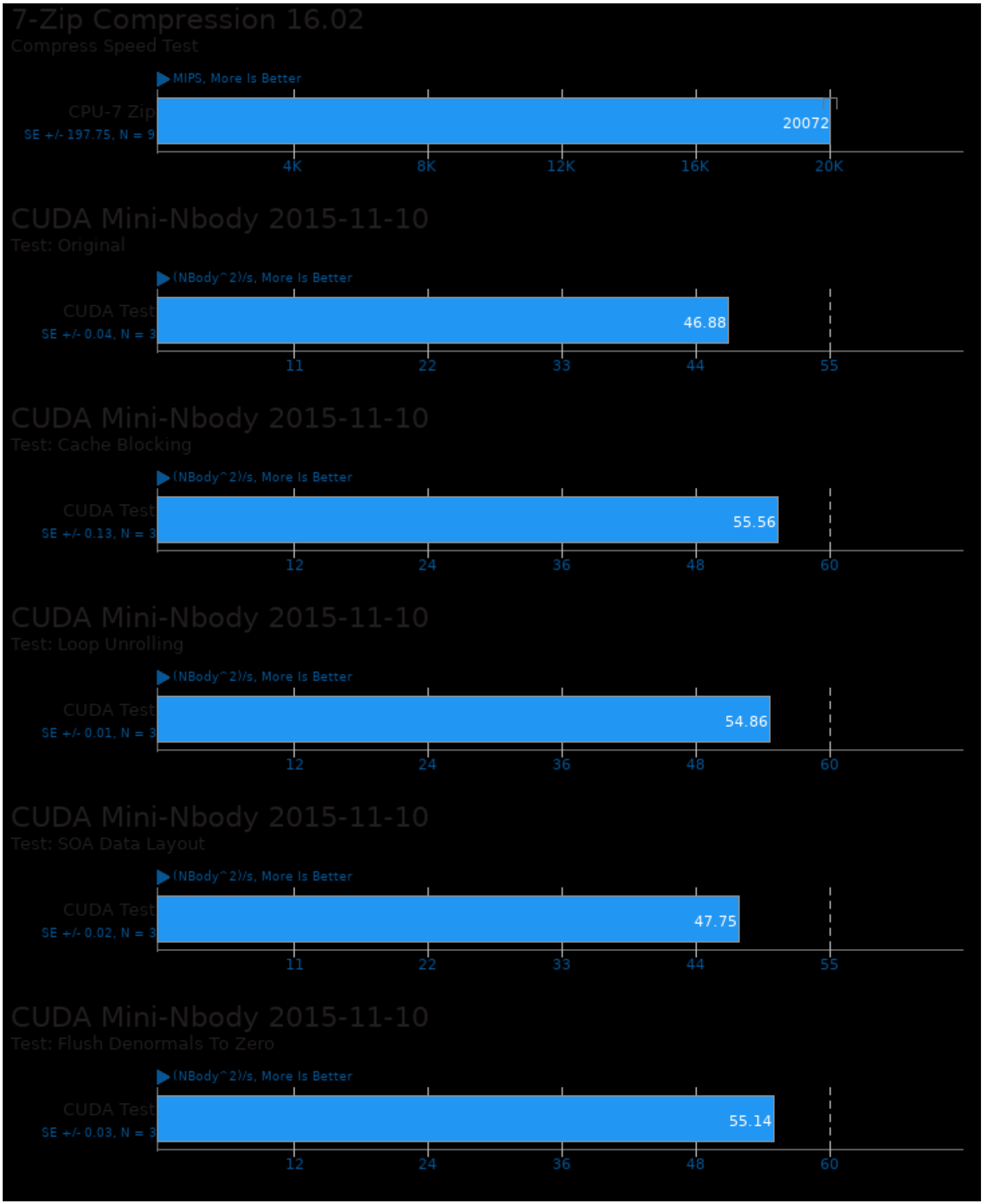
JS-E02_AX720_R32_3_1

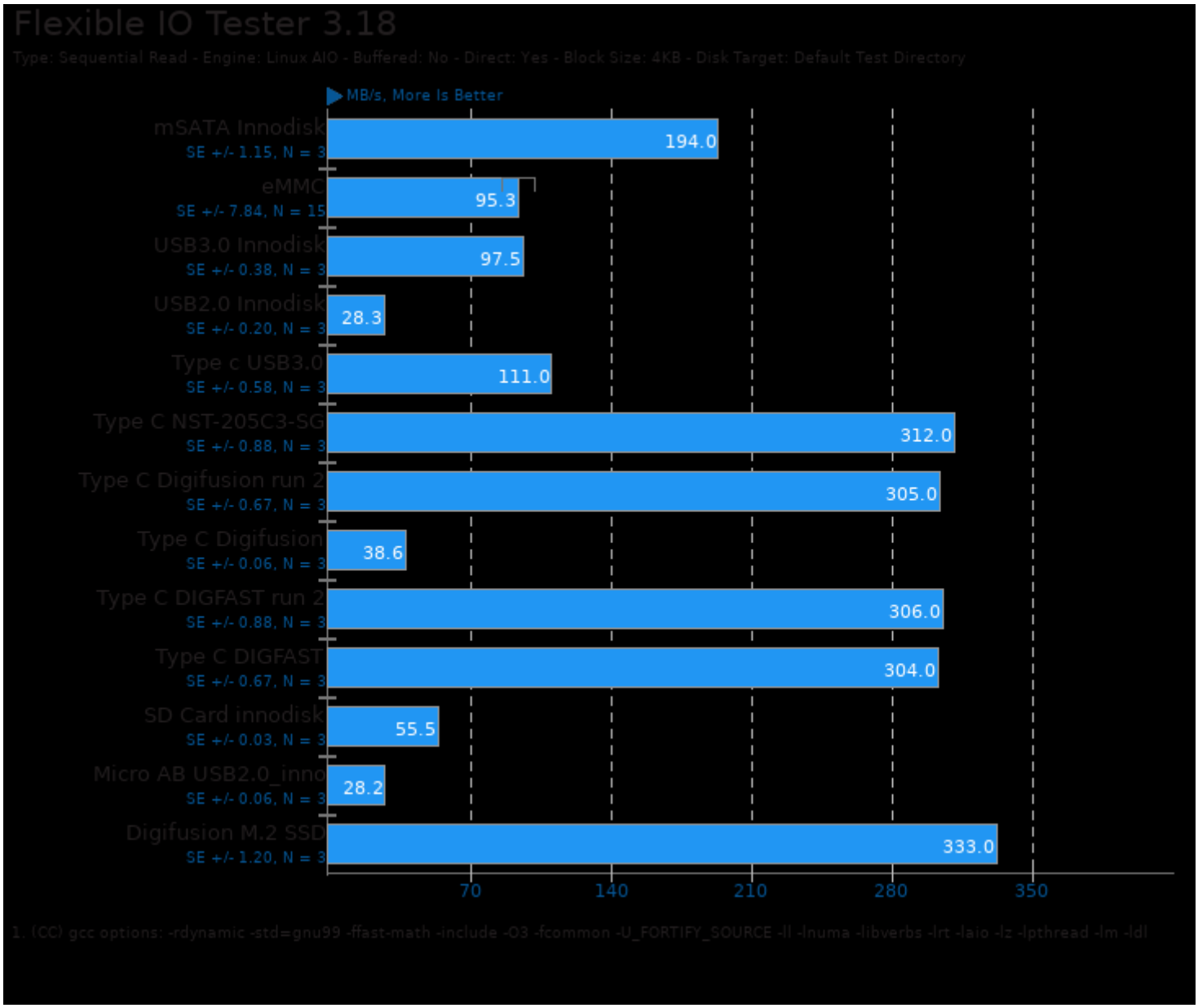
iPerf - 192.168.1.2 - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 1 (Mbits/s)			951 / 952 / 956
Normalized			99.4% / 99.5% / 100%
Standard Deviation			0.5% / 0.5%
Stream - Copy (MB/s)		676	
Standard Deviation		84	
		0.8%	
Stream - Scale (MB/s)		677	
Standard Deviation		63	
		1%	
Stream - Triad (MB/s)		600	
Standard Deviation		34	
		0.5%	
Stream - Add (MB/s)		599	
Standard Deviation		40	
		0.4%	
Stress-NG - Forking (Bogo Ops/s)	7153 / 7051		
Normalized	100% / 98.5%		
Standard Deviation	0.5% / 0.4%		

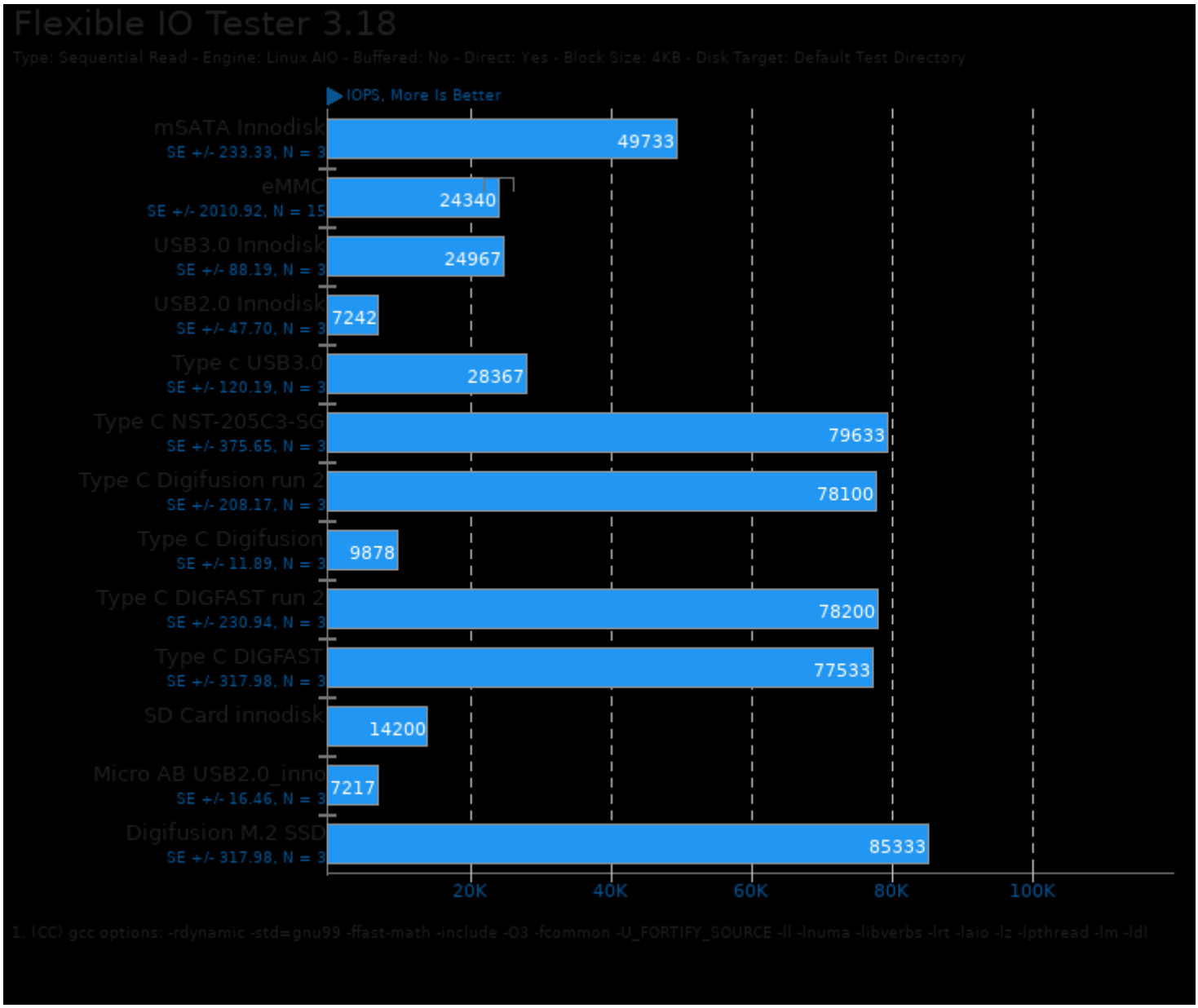
JS-E02_AX720_R32_3_1

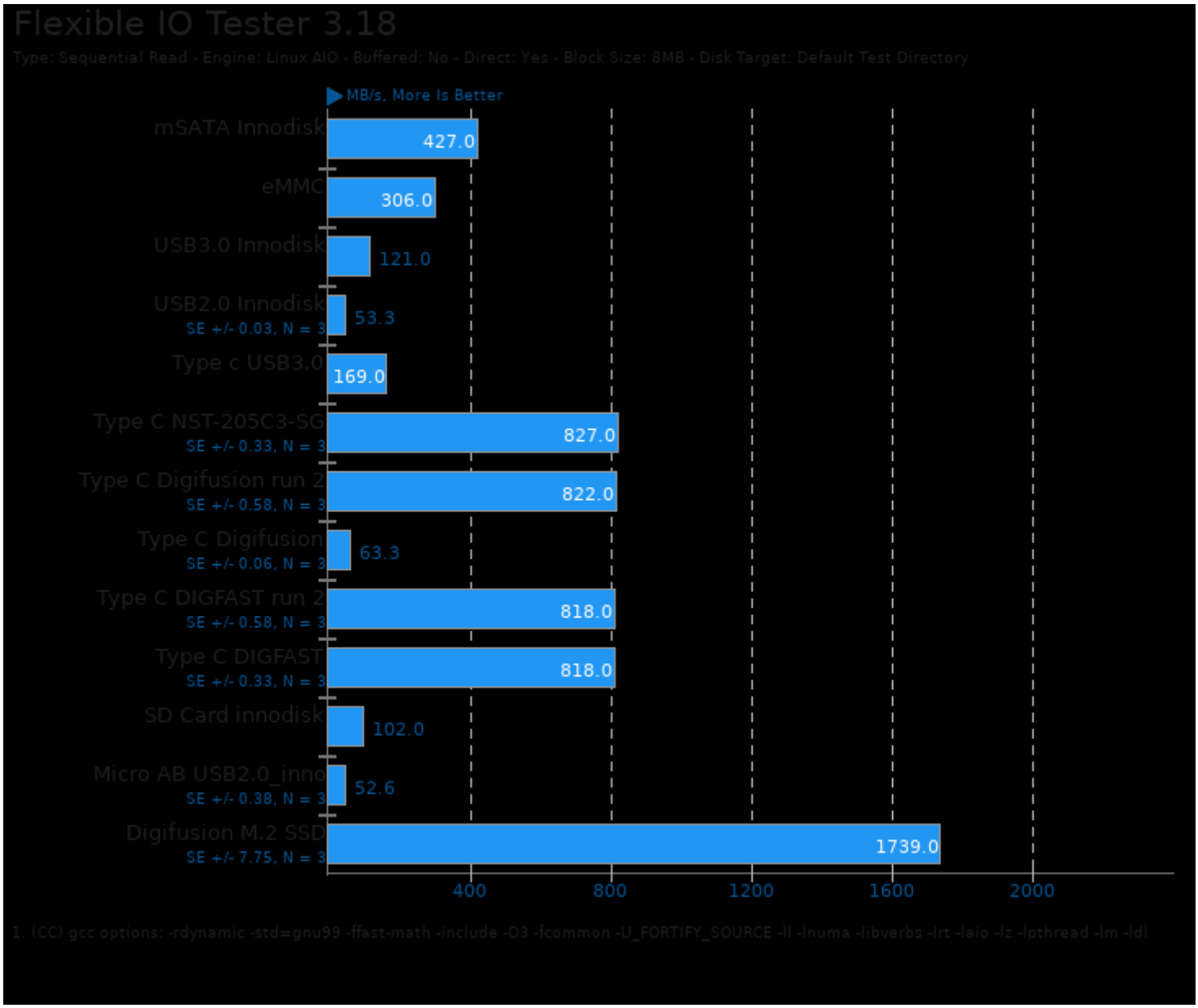
Stress-NG - CPU Stress (Bogo Ops/s)	886.60	901.27
Normalized	98.37%	100%
Standard Deviation	2.9%	0.1%
Stress-NG - Crypto (Bogo Ops/s)		121.2
Standard Deviation		1.7%
Stress-NG - Matrix Math (Bogo		140.12
Standard Deviation		0.3%
Stress-NG - Vector Math (Bogo Ops/s)		521.80
Standard Deviation		0%
Stress-NG - Memory Copying (Bogo Ops/s)		325.1
Standard Deviation		0.3%
Stress-NG - G.C.S.F (Bogo Ops/s)		226.721
Standard Deviation		1.4%

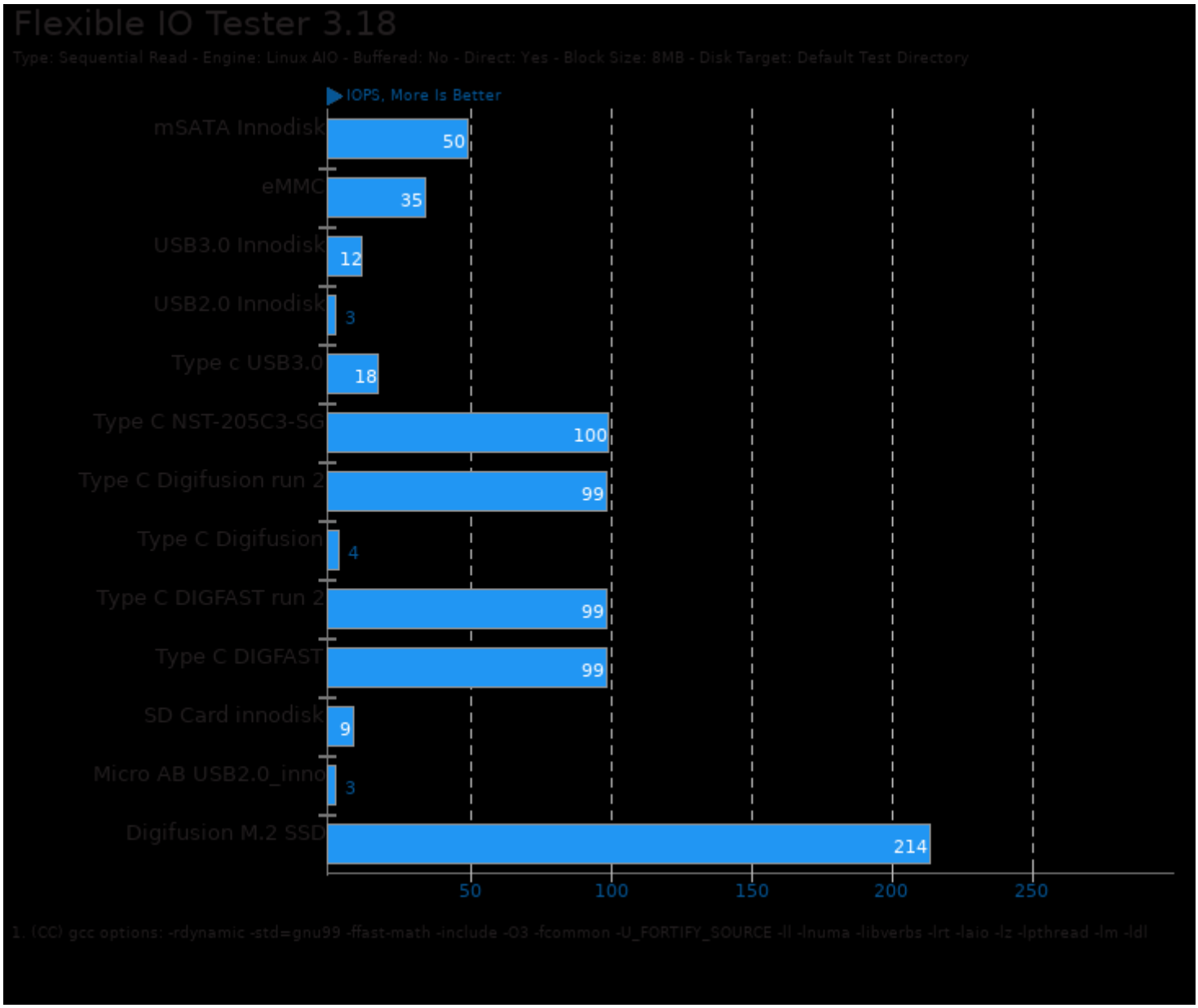
Stress-NG - G.Q.D.S (Bogo Ops/s)	48.63
Standard Deviation	16.8 %

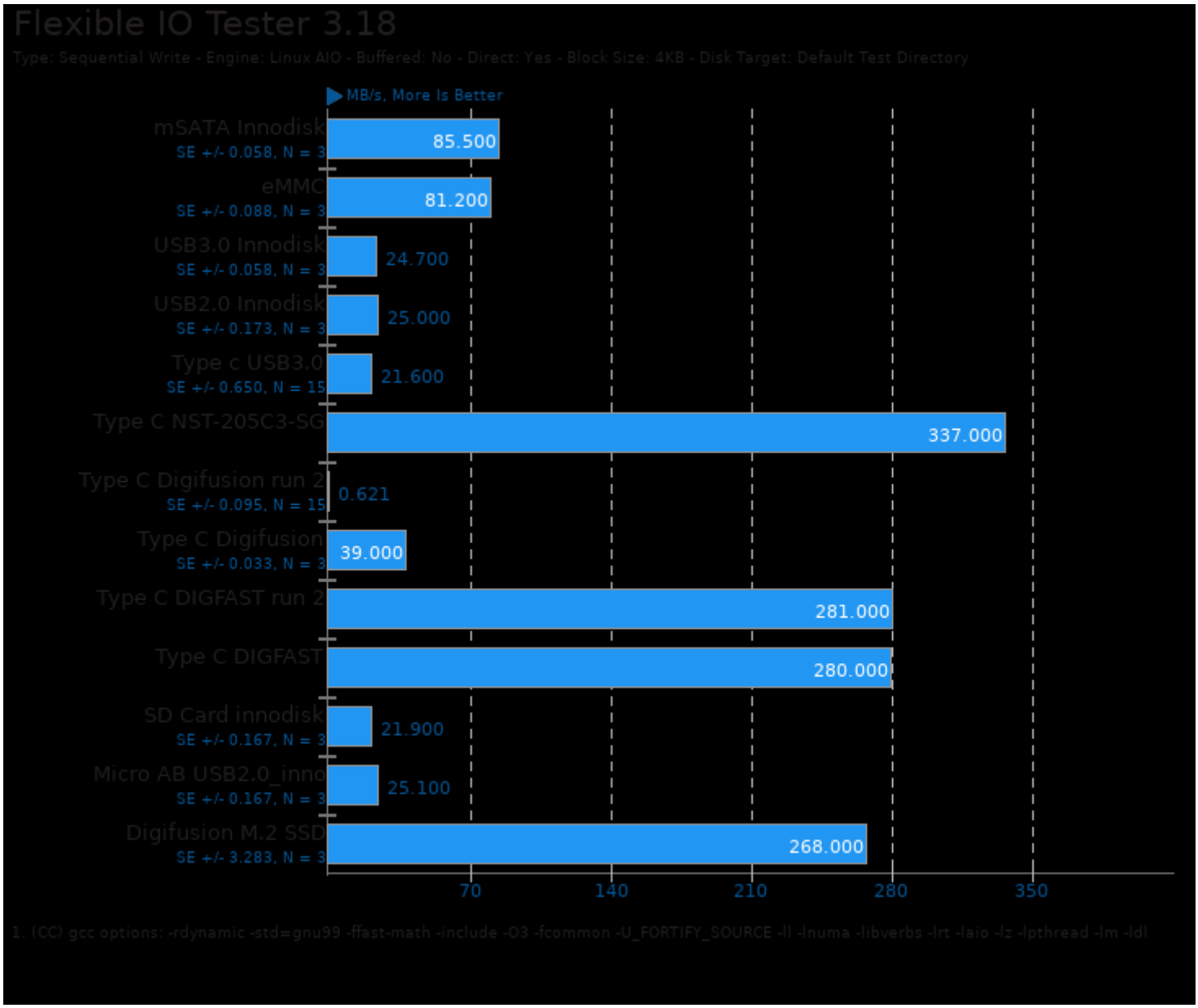

7-Zip Compression 16.02
Compress Speed Test
MIPS, More Is Better
CPU-7 Zip
SE +/- 197.75, N = 9
20072
4K
8K
12K
16K
20K
CUDA Mini-Nbody 2015-11-10
Test: Original
(NBody^2)/s, More Is Better
CUDA Test
SE +/- 0.04, N = 3
46.88
11
22
33
44
55
CUDA Mini-Nbody 2015-11-10
Test: Cache Blocking
(NBody^2)/s, More Is Better
CUDA Test
SE +/- 0.13, N = 3
55.56
12
24
36
48
60
CUDA Mini-Nbody 2015-11-10
Test: Loop Unrolling
(NBody^2)/s, More Is Better
CUDA Test
SE +/- 0.01, N = 3
54.86
12
24
36
48
60
CUDA Mini-Nbody 2015-11-10
Test: SOA Data Layout
(NBody^2)/s, More Is Better
CUDA Test
SE +/- 0.02, N = 3
47.75
11
22
33
44
55
CUDA Mini-Nbody 2015-11-10
Test: Flush Denormals To Zero
(NBody^2)/s, More Is Better
CUDA Test
SE +/- 0.03, N = 3
55.14
12
24
36
48
60

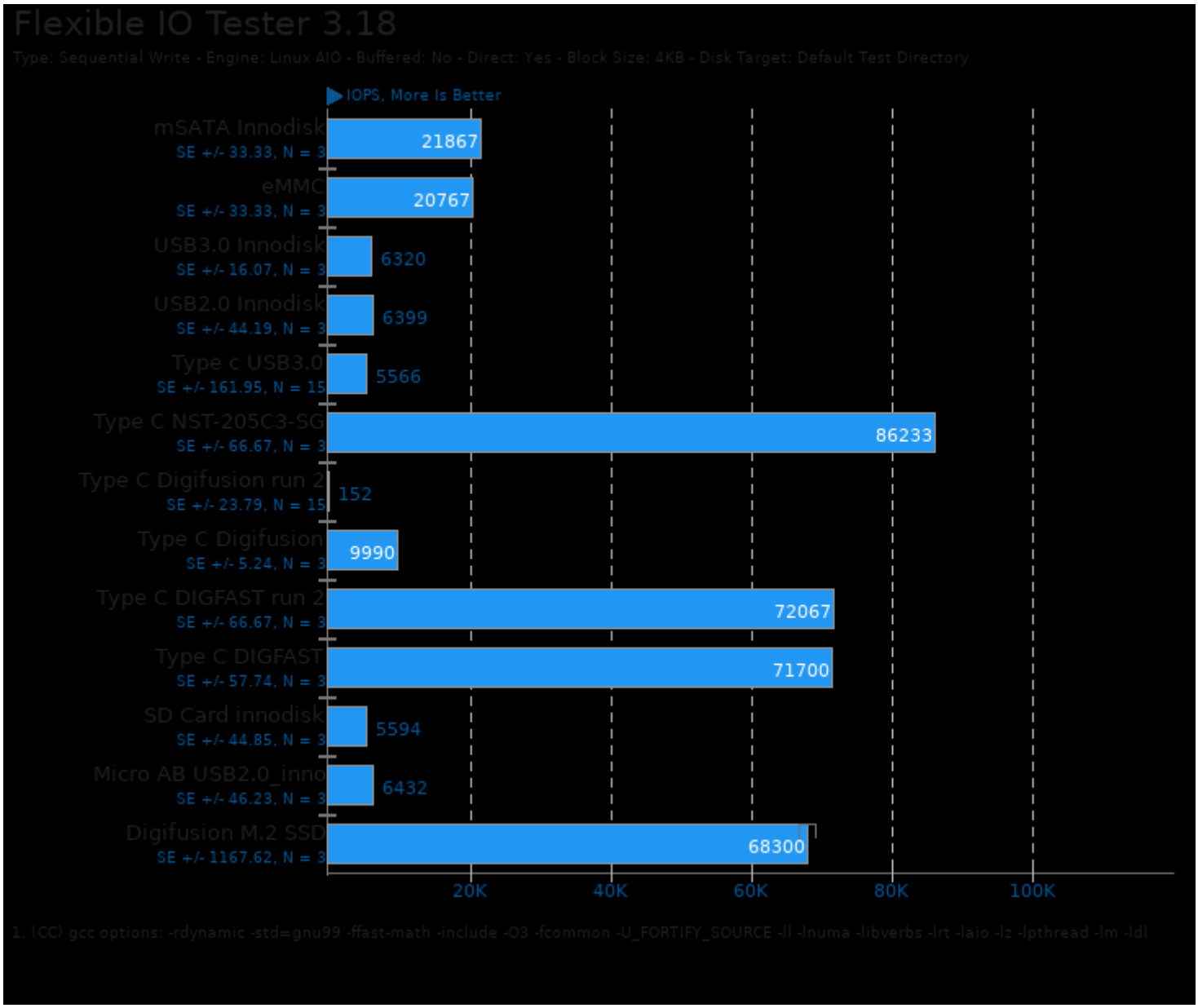

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
mSATA Innodisk
SE +/- 1.15, N = 3
194.0
eMMC
SE +/- 7.84, N = 15
95.3
USB3.0 Innodisk
SE +/- 0.38, N = 3
97.5
USB2.0 Innodisk
SE +/- 0.20, N = 3
28.3
Type c USB3.0
SE +/- 0.58, N = 3
111.0
Type C NST-205C3-SG
SE +/- 0.88, N = 3
312.0
Type C Digifusion run 2
SE +/- 0.67, N = 3
305.0
Type C Digifusion
SE +/- 0.06, N = 3
38.6
Type C DIGFAST run 2
SE +/- 0.88, N = 3
306.0
Type C DIGFAST
SE +/- 0.67, N = 3
304.0
SD Card innodisk
SE +/- 0.03, N = 3
55.5
Micro AB USB2.0_inno
SE +/- 0.06, N = 3
28.2
Digifusion M.2 SSD
SE +/- 1.20, N = 3
333.0
70
140
210
280
350
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

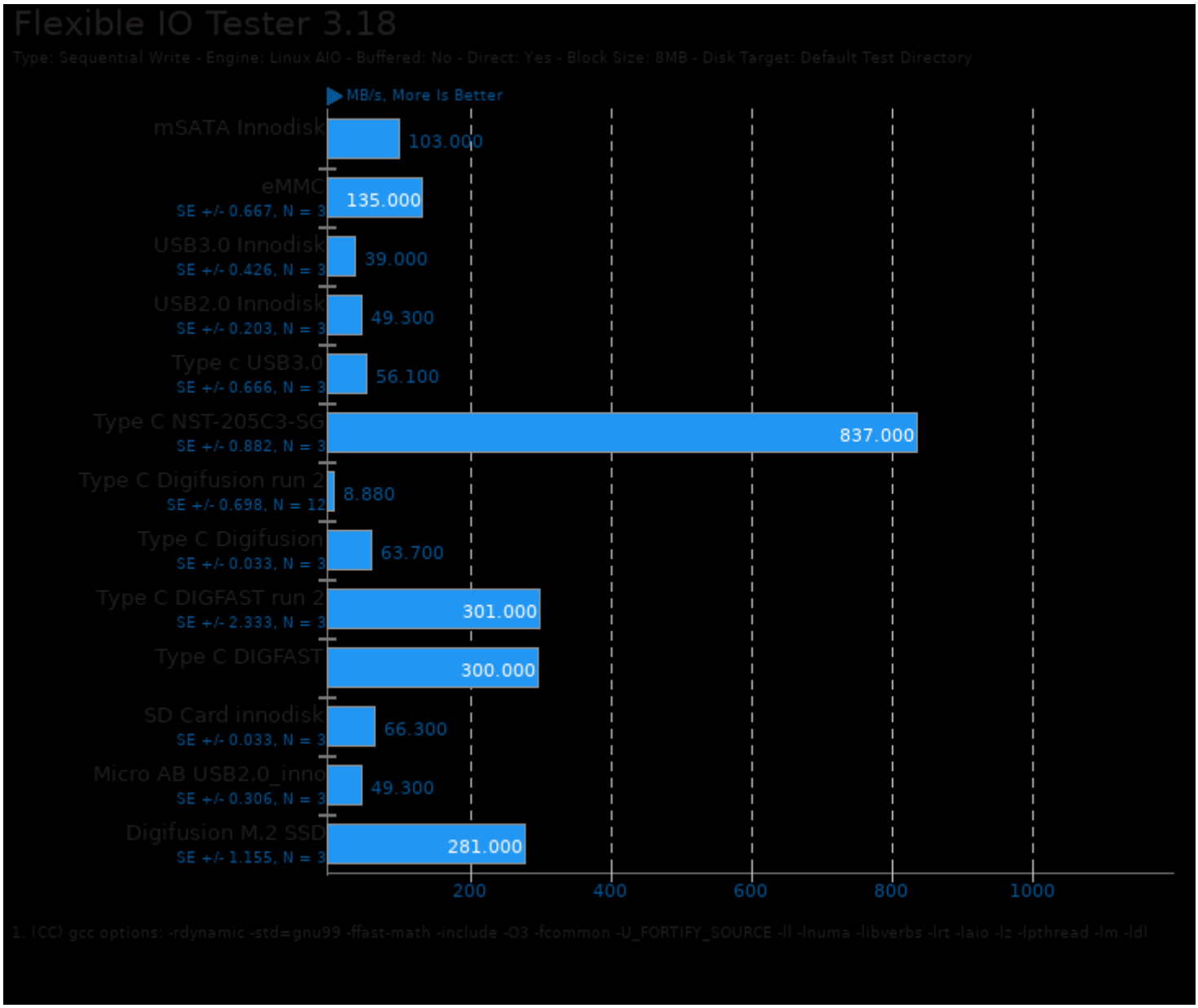

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
mSATA Innodisk
SE +/- 233.33, N = 3
49733
eMMC
SE +/- 2010.92, N = 15
24340
USB3.0 Innodisk
SE +/- 88.19, N = 3
24967
USB2.0 Innodisk
SE +/- 47.70, N = 3
7242
Type c USB3.0
SE +/- 120.19, N = 3
28367
Type C NST-205C3-SG
SE +/- 375.65, N = 3
79633
Type C Digifusion run 2
SE +/- 208.17, N = 3
78100
Type C Digifusion
SE +/- 11.89, N = 3
9878
Type C DIGFAST run 2
SE +/- 230.94, N = 3
78200
Type C DIGFAST
SE +/- 317.98, N = 3
77533
SD Card innodisk
14200
Micro AB USB2.0_inno
SE +/- 16.46, N = 3
7217
Digifusion M.2 SSD
SE +/- 317.98, N = 3
85333
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

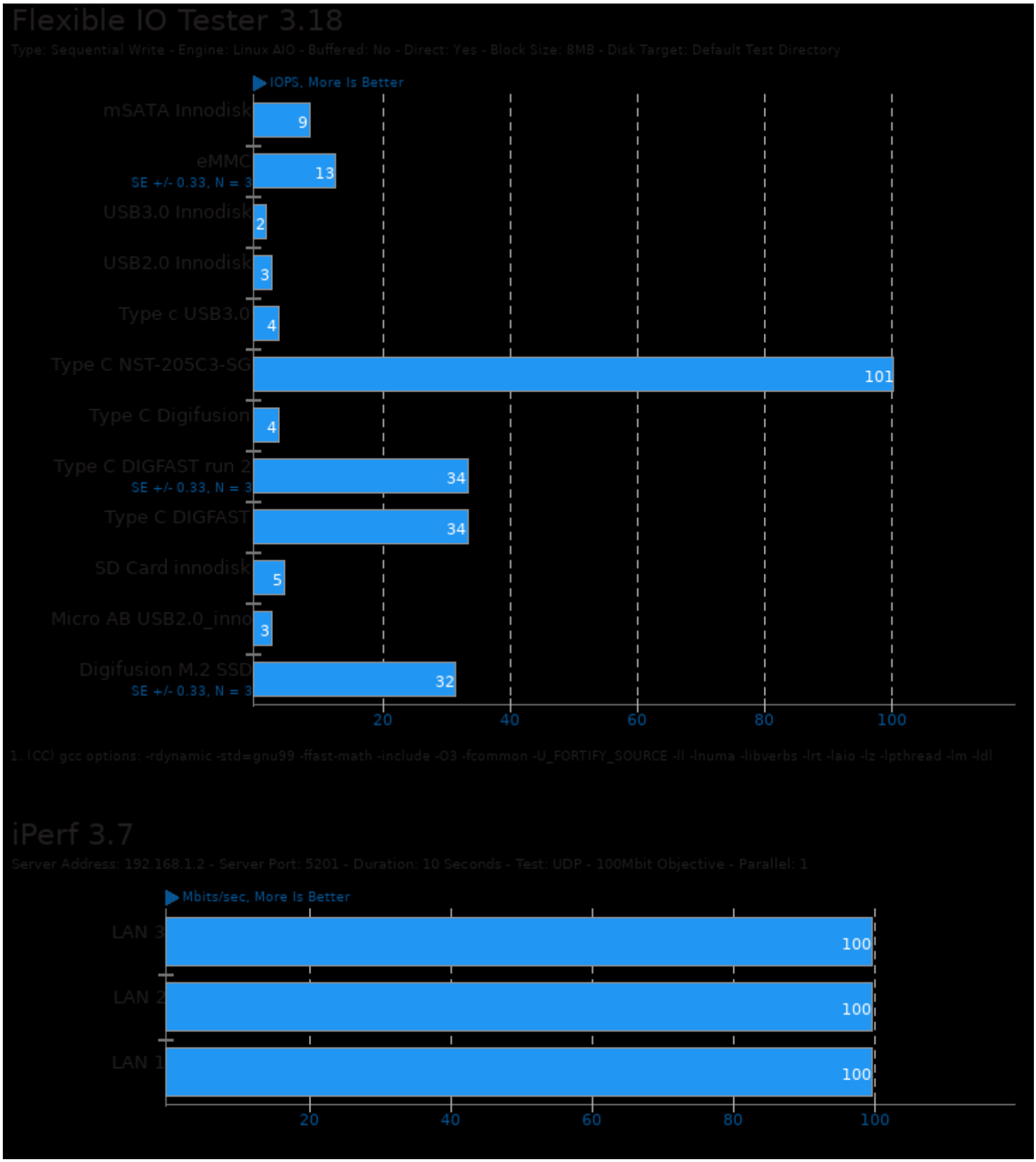

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
mSATA Innodisk
427.0
eMMC
306.0
USB3.0 Innodisk
121.0
USB2.0 Innodisk
SE +/- 0.03, N = 3
53.3
Type c USB3.0
169.0
Type C NST-205C3-SG
SE +/- 0.33, N = 3
827.0
Type C Digifusion run 2
SE +/- 0.58, N = 3
822.0
Type C Digifusion
SE +/- 0.06, N = 3
63.3
Type C DIGFAST run 2
SE +/- 0.58, N = 3
818.0
Type C DIGFAST
SE +/- 0.33, N = 3
818.0
SD Card innodisk
102.0
Micro AB USB2.0_inno
SE +/- 0.38, N = 3
52.6
Digifusion M.2 SSD
SE +/- 7.75, N = 3
1739.0
400
800
1200
1600
2000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

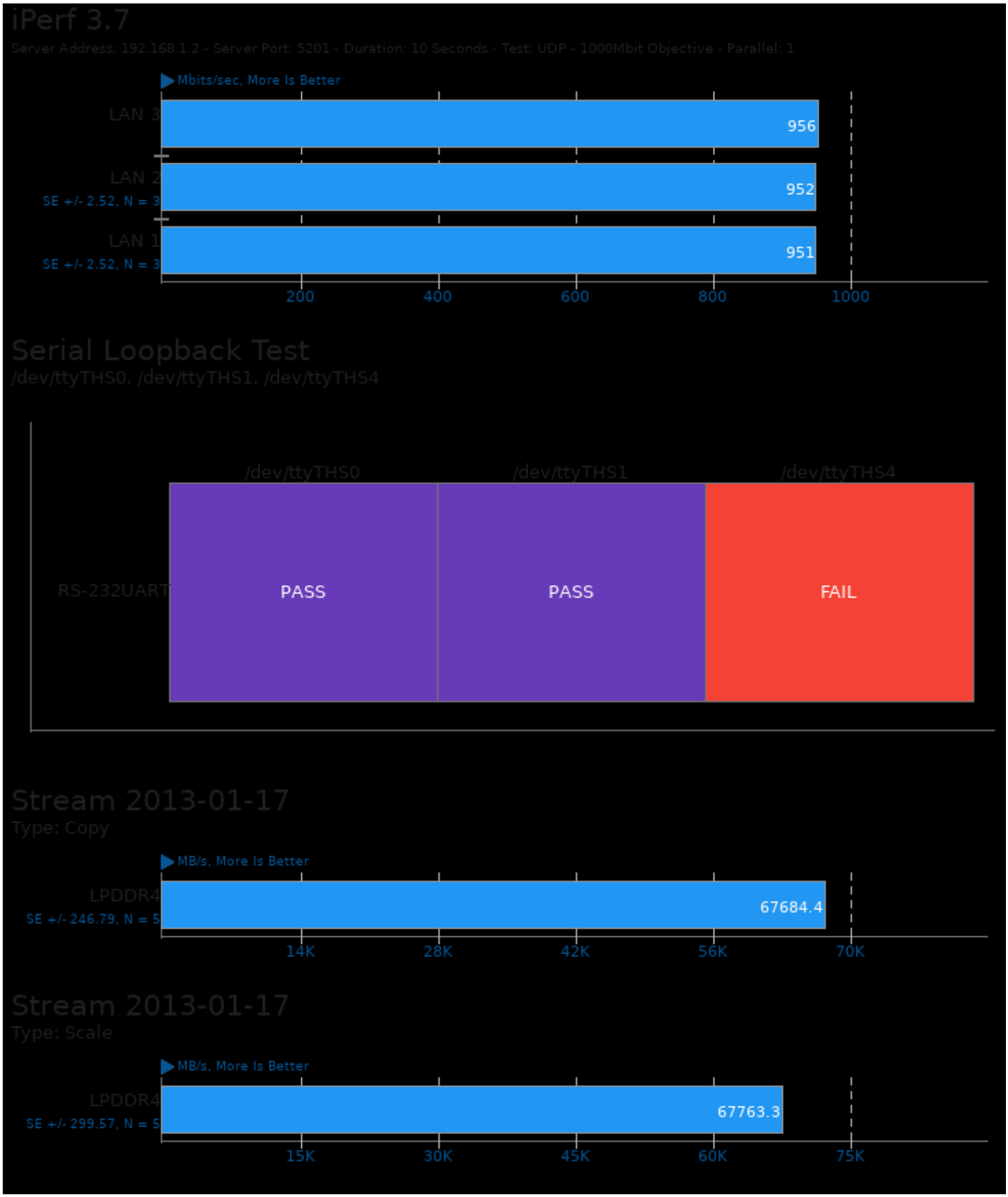

Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
IOPS, More Is Better
mSATA Innodisk
50
eMMC
35
USB3.0 Innodisk
12
USB2.0 Innodisk
3
Type c USB3.0
18
Type C NST-205C3-SG
100
Type C Digifusion run 2
99
Type C Digifusion
4
Type C DIGFAST run 2
99
Type C DIGFAST
99
SD Card innodisk
9
Micro AB USB2.0_inno
3
Digifusion M.2 SSD
214
50
100
150
200
250
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

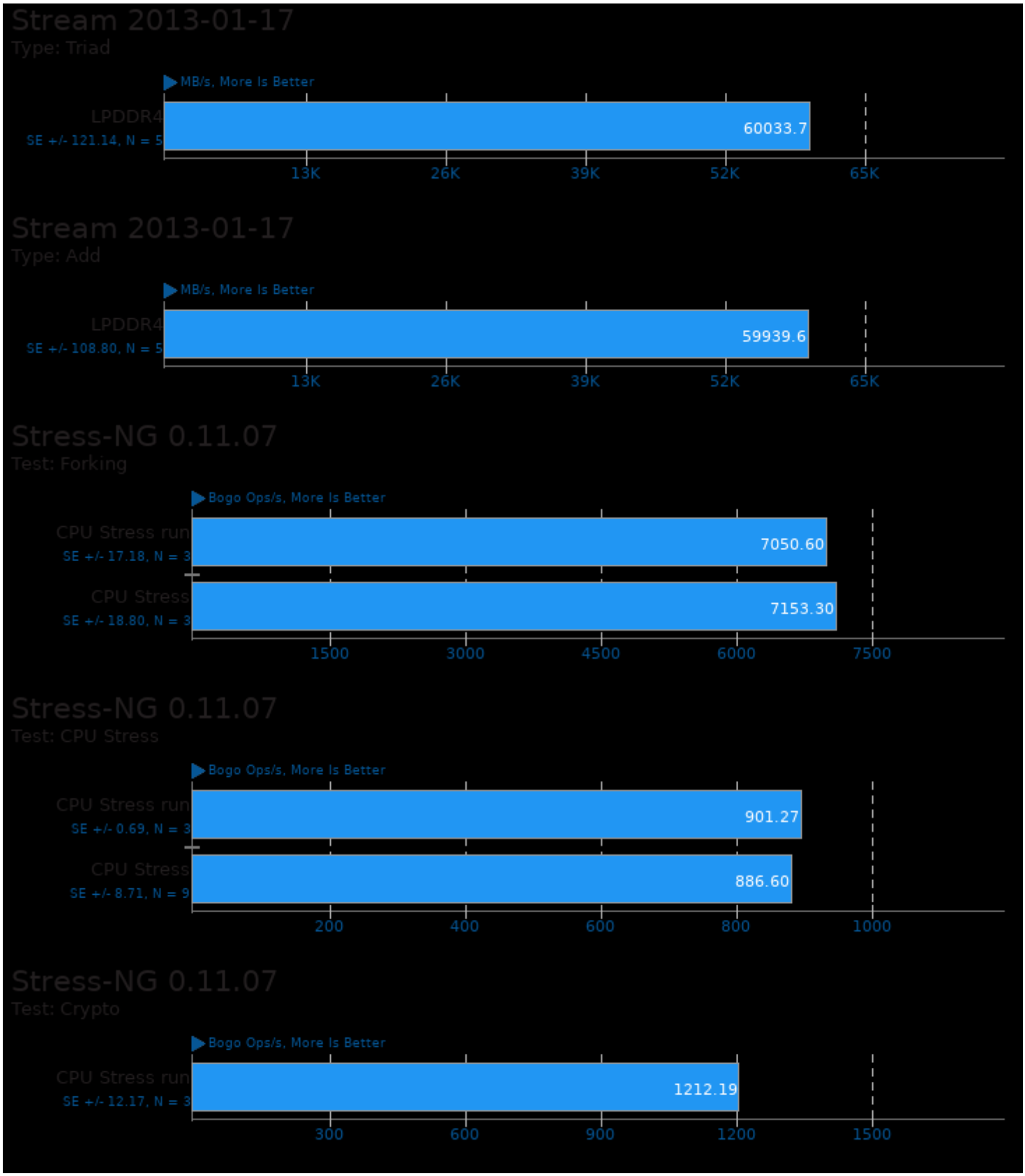

Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
MB/s, More Is Better
mSATA Innodisk
SE +/- 0.058, N = 3
85.500
eMMC
SE +/- 0.088, N = 3
81.200
USB3.0 Innodisk
SE +/- 0.058, N = 3
24.700
USB2.0 Innodisk
SE +/- 0.173, N = 3
25.000
Type c USB3.0
SE +/- 0.650, N = 15
21.600
Type C NST-205C3-SG
337.000
Type C Digifusion run 2
SE +/- 0.095, N = 15
0.621
Type C Digifusion
SE +/- 0.033, N = 3
39.000
Type C DIGFAST run 2
281.000
Type C DIGFAST
280.000
SD Card innodisk
SE +/- 0.167, N = 3
21.900
Micro AB USB2.0_inno
SE +/- 0.167, N = 3
25.100
Digifusion M.2 SSD
SE +/- 3.283, N = 3
268.000
70
140
210
280
350
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl

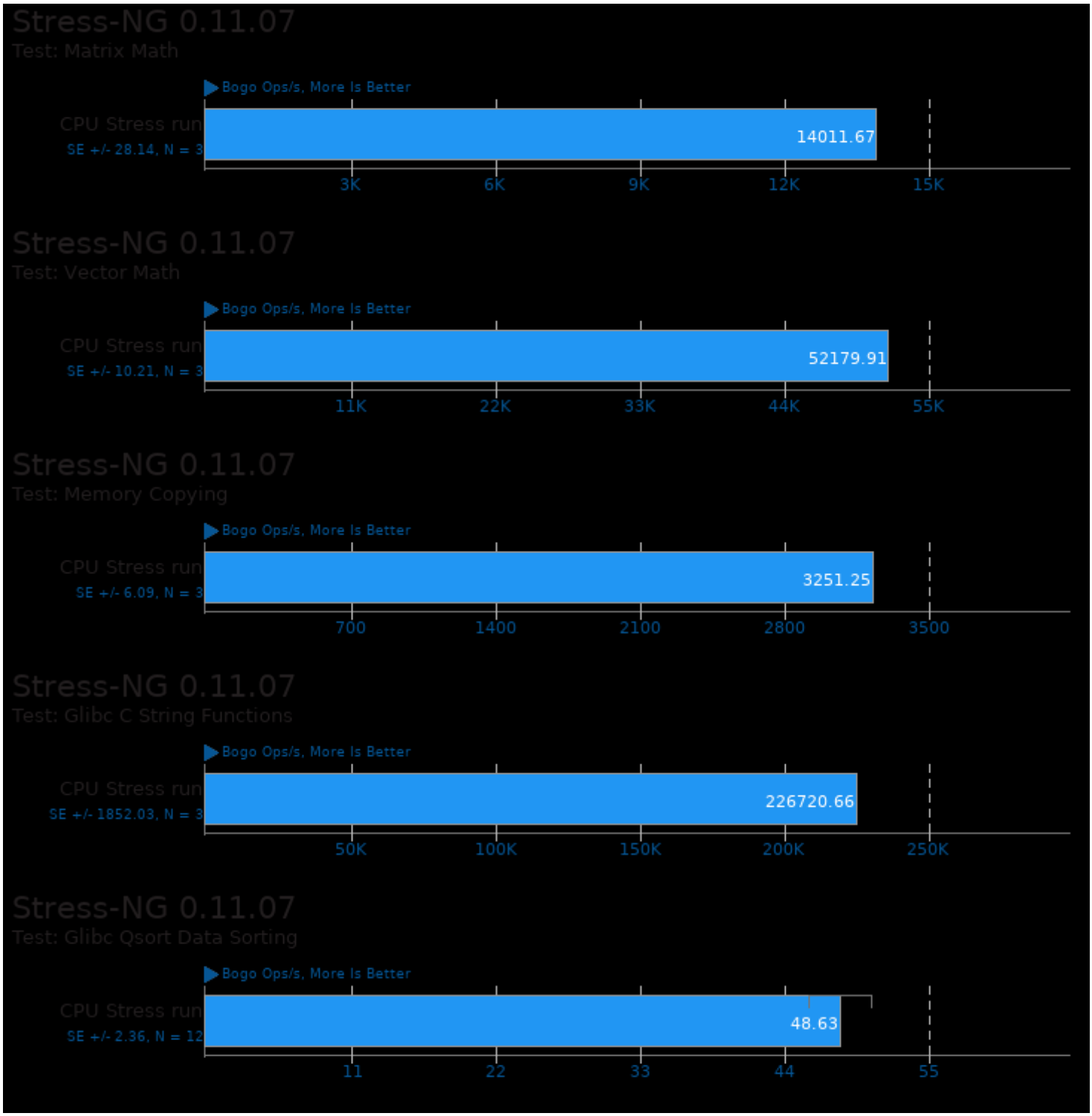

Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
mSATA Innodisk
SE +/- 33.33, N = 3
21867
eMMC
SE +/- 33.33, N = 3
20767
USB3.0 Innodisk
SE +/- 16.07, N = 3
6320
USB2.0 Innodisk
SE +/- 44.19, N = 3
6399
Type c USB3.0
SE +/- 161.95, N = 15
5566
Type C NST-205C3-SG
SE +/- 66.67, N = 3
86233
Type C Digifusion run 2
SE +/- 23.79, N = 15
152
Type C Digifusion
SE +/- 5.24, N = 3
9990
Type C DIGFAST run 2
SE +/- 66.67, N = 3
72067
Type C DIGFAST
SE +/- 57.74, N = 3
71700
SD Card innodisk
SE +/- 44.85, N = 3
5594
Micro AB USB2.0_inno
SE +/- 46.23, N = 3
6432
Digifusion M.2 SSD
SE +/- 1167.62, N = 3
68300
20K
40K
60K
80K
100K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
MB/s, More Is Better
mSATA Innodisk
103.000
eMMC
SE +/- 0.667, N = 3
135.000
USB3.0 Innodisk
SE +/- 0.426, N = 3
39.000
USB2.0 Innodisk
SE +/- 0.203, N = 3
49.300
Type c USB3.0
SE +/- 0.666, N = 3
56.100
Type C NST-205C3-SG
SE +/- 0.882, N = 3
837.000
Type C Digifusion run 2
SE +/- 0.698, N = 12
8.880
Type C Digifusion
SE +/- 0.033, N = 3
63.700
Type C DIGFAST run 2
SE +/- 2.333, N = 3
301.000
Type C DIGFAST
300.000
SD Card innodisk
SE +/- 0.033, N = 3
66.300
Micro AB USB2.0_inno
SE +/- 0.306, N = 3
49.300
Digifusion M.2 SSD
SE +/- 1.155, N = 3
281.000
200
400
600
800
1000
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl


Flexible IO Tester 3.18
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory
IOPS, More Is Better
mSATA Innodisk
9
eMMC
13
SE +/- 0.33, N = 3
USB3.0 Innodisk
2
USB2.0 Innodisk
3
Type c USB3.0
4
Type C NST-205C3-SG
101
Type C Digifusion
4
Type C DIGFAST run 2
34
SE +/- 0.33, N = 3
Type C DIGFAST
34
SD Card innodisk
5
Micro AB USB2.0_inno
3
Digifusion M.2 SSD
32
SE +/- 0.33, N = 3
20
40
60
80
100
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lnuma -libverbs -lrt -laio -lz -lpthread -lm -ldl
iPerf 3.7
Server Address: 192.168.1.2 - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 100Mbit Objective - Parallel: 1
Mbits/sec, More Is Better
LAN 3
100
LAN 2
100
LAN 1
100
20
40
60
80
100


iPerf 3.7
Server Address: 192.168.1.2 - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 1000Mbit Objective - Parallel: 1
Mbits/sec, More Is Better
LAN 3
956
LAN 2
SE +/- 2.52, N = 3
952
LAN 1
SE +/- 2.52, N = 3
951
200
400
600
800
1000
Serial Loopback Test
/dev/ttyTHS0, /dev/ttyTHS1, /dev/ttyTHS4
/dev/ttyTHS0
/dev/ttyTHS1
/dev/ttyTHS4
RS-232UART
PASS
PASS
FAIL
Stream 2013-01-17
Type: Copy
MB/s, More Is Better
LPDDR4
SE +/- 246.79, N = 5
67684.4
14K
28K
42K
56K
70K
Stream 2013-01-17
Type: Scale
MB/s, More Is Better
LPDDR4
SE +/- 299.57, N = 5
67763.3
15K
30K
45K
60K
75K


Stream 2013-01-17
Type: Triad
MB/s, More Is Better
LPDDR4
SE +/- 121.14, N = 5
60033.7
13K
26K
39K
52K
65K
Stream 2013-01-17
Type: Add
MB/s, More Is Better
LPDDR4
SE +/- 108.80, N = 5
59939.6
13K
26K
39K
52K
65K
Stress-NG 0.11.07
Test: Forking
Bogo Ops/s, More Is Better
CPU Stress run
SE +/- 17.18, N = 3
7050.60
CPU Stress
SE +/- 18.80, N = 3
7153.30
1500
3000
4500
6000
7500
Stress-NG 0.11.07
Test: CPU Stress
Bogo Ops/s, More Is Better
CPU Stress run
SE +/- 0.69, N = 3
901.27
CPU Stress
SE +/- 8.71, N = 9
886.60
200
400
600
800
1000
Stress-NG 0.11.07
Test: Crypto
Bogo Ops/s, More Is Better
CPU Stress run
SE +/- 12.17, N = 3
1212.19
300
600
900
1200
1500



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