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R32.4.3_AN110_IMX290

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

Test Systems:

emmc

USB3.0

USB2.0

SD Card

LPDDR4

CPU Stress

GPU Stress

LAN

Processor: ARMv8 rev 0 @ 1.50GHz (2 Cores), Motherboard: NVIDIA Jetson Xavier NX Developer Kit, Memory: 8GB, Disk: 16GB USB Drive 3ME + 16GB DG4016, Graphics: NVIDIA Tegra Xavier, Monitor: ASUS VN248

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 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0, 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

RS232,UART

DG4016

Processor: ARMv8 rev 0 @ 1.50GHz (2 Cores), Motherboard: NVIDIA Jetson Xavier NX Developer Kit, Memory: 8GB, Disk: 16GB DG4016, Graphics: NVIDIA Tegra Xavier, Monitor: ASUS VN248

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 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0, 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

WLAN

test

Processor: ARMv8 rev 0 @ 1.50GHz (2 Cores), Motherboard: NVIDIA Jetson Xavier NX Developer Kit, Memory: 8GB, Disk: 16GB DG4016, Graphics: NVIDIA Tegra Xavier, Monitor: ASUS VN248, Network: Intel 8265 / 8275

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 32.4.3, OpenGL: 4.6.0, Vulkan: 1.2.131, Compiler: GCC 7.5.0, File-System: ext4, Screen Resolution: 1920x1080

Processor Notes: Scaling Governor: tegra_cpufreq schedutil

	emmc	USB3.0	USB2.0	SD Card	LPDDR4	CPU Stress	GPU Stress	LAN	RS232, UART	DG4016	WLAN	test

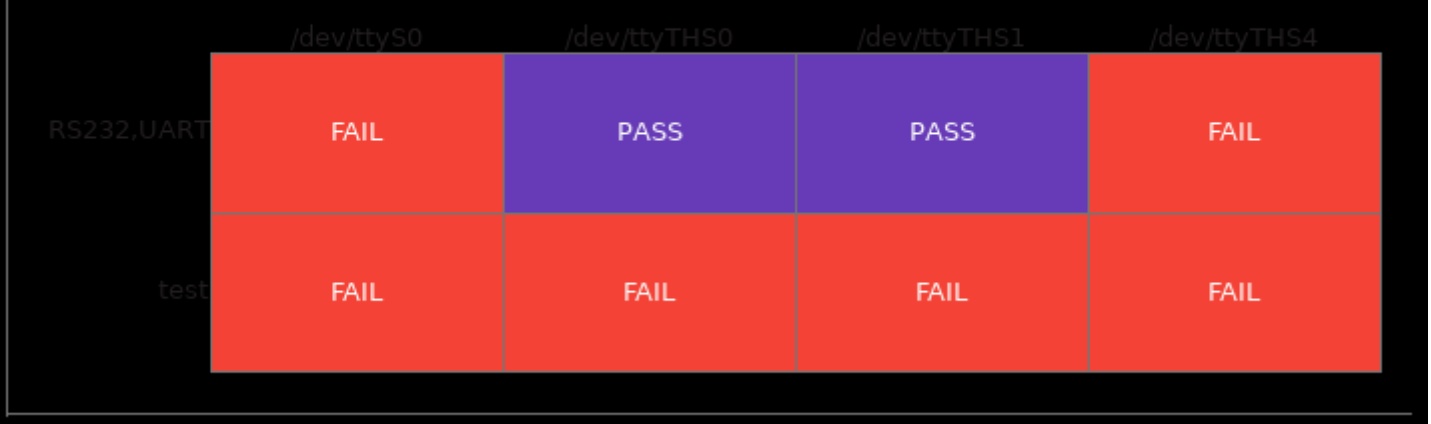
Stress-NG - Crypto (Bogo Ops/s)					**204.32**	**514.21**
Normalized					39.73%	100%
Standard Deviation					2.9%	1.3%
Stress-NG - Forking (Bogo Ops/s)					**2486**	**3551**
Normalized					70.02%	100%
Standard Deviation					3.2%	1.3%
Stress-NG - CPU Stress (Bogo Ops/s)					**130.44**	**389.51**
Normalized					33.49%	100%
Standard Deviation					25%	3.4%
Stress-NG - Matrix Math (Bogo Ops/s)					**2282**	**5748**
Normalized					39.71%	100%
Standard Deviation					4.8%	0.5%
Stress-NG - Vector Math (Bogo Ops/s)					**8810**	**21220**
Normalized					41.51%	100%
Standard Deviation					0.6%	1.9%
Stress-NG - Memory Copying (Bogo Ops/s)					**714.62**	**1691**
Normalized					42.25%	100%
Standard Deviation					0.2%	0.7%
Stress-NG - G.C.S.F (Bogo Ops/s)					**36835**	**102489**
Normalized					35.94%	100%
Standard Deviation					3.4%	3.6%
Stress-NG - G.Q.D.S (Bogo Ops/s)					**7.50**	**19.07**
Normalized					39.33%	100%
Standard Deviation					20.1%	6.8%
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB	**38867**	24500	**4640**	14533		
Normalized	100%	63.04%	11.94%	37.39%		
Standard Deviation	0.1%		3.7%	1.1%		

Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB	**36**	12	**2**	9				
Normalized	100%	33.33%	5.56%	25%				
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB	**20400**	6362	**1848**	4008				
Normalized	100%	31.19%	9.06%	19.65%				
Standard Deviation		0.4%	6.2%	11.9%				
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB	**9**	**2**		4				
Normalized	100%	22.22%		44.44%				
Standard Deviation				18.1%				
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 4KB	**152**	95.7	**18.1**	56.8				
Normalized	100%	62.96%	11.91%	37.37%				
Standard Deviation		0.2%	4%	0.9%				
Flexible IO Tester - Seq Read - Linux AIO - No - Yes - 8MB	**315**	121	**41.8**	103				
Normalized	100%	38.41%	13.27%	32.7%				
Standard Deviation			1.9%	0.6%				
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 4KB	**79.8**	24.6	**7.407**	15.5				
Normalized	100%	30.83%	9.28%	19.42%				
Standard Deviation	0.1%	2%	6.2%	12%				
Flexible IO Tester - Seq Write - Linux AIO - No - Yes - 8MB	**101**	38.9	**29.5**	54.5				
Normalized	100%	38.51%	29.21%	53.96%				
Standard Deviation		2.1%	2.2%	7%				
Stream - Copy (MB/s)					**15423**		**30233**	
Normalized					51.01%		100%	
Standard Deviation					0.1%		1.5%	
Stream - Scale (MB/s)					**15604**		**29374**	
Normalized					53.12%		100%	
Standard Deviation					0.1%		0.6%	

Stream - Triad (MB/s)	**15105**		**28271**	
Normalized	53.43%		100%	
Standard Deviation	0.1%		0.3%	
Stream - Add (MB/s)	**15068**		**27676**	
Normalized	54.44%		100%	
Standard Deviation	0%		0.7%	
iPerf - 192.168.1.2 - 5201 - 10 Seconds - UDP - 100Mbit Objective - 10			**943**	**136**
Normalized			100%	14.42%
Standard Deviation			0.5%	9.1%
iPerf - 192.168.1.2 - 5201 - 10 Seconds - UDP - 1000Mbit Objective - 10 (Mbits/s)			**946**	**134**
Normalized			100%	14.16%
Standard Deviation				8.3%
GLmark2 - 800 x 600 (Score)		3404		
GLmark2 - 1024 x 768 (Score)		2747		
GLmark2 - 1280 x 1024 (Score)		1970		
GLmark2 - 1920 x 1080 (Score)		1475		

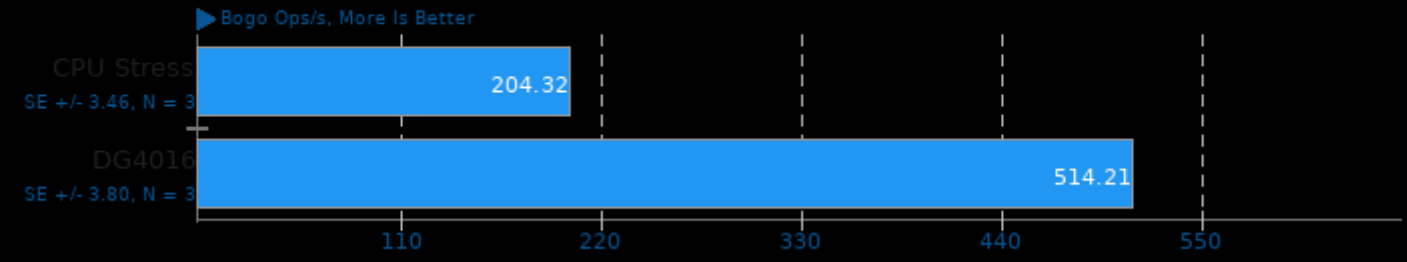
Serial Loopback Test

/dev/ttyS0, /dev/ttyTHS0, /dev/ttyTHS1, /dev/ttyTHS4



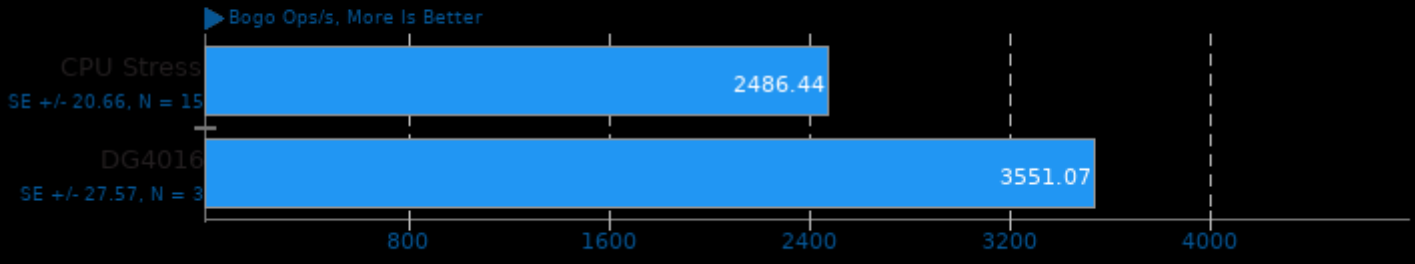
Stress-NG 0.11.07

Test: Crypto



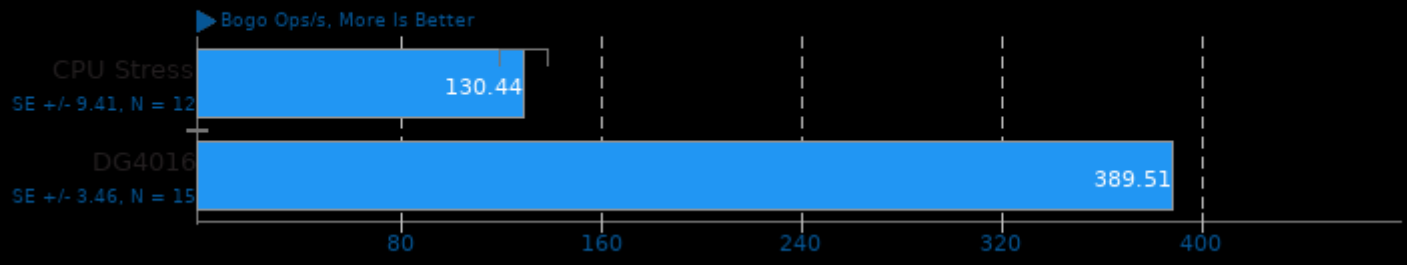
Stress-NG 0.11.07

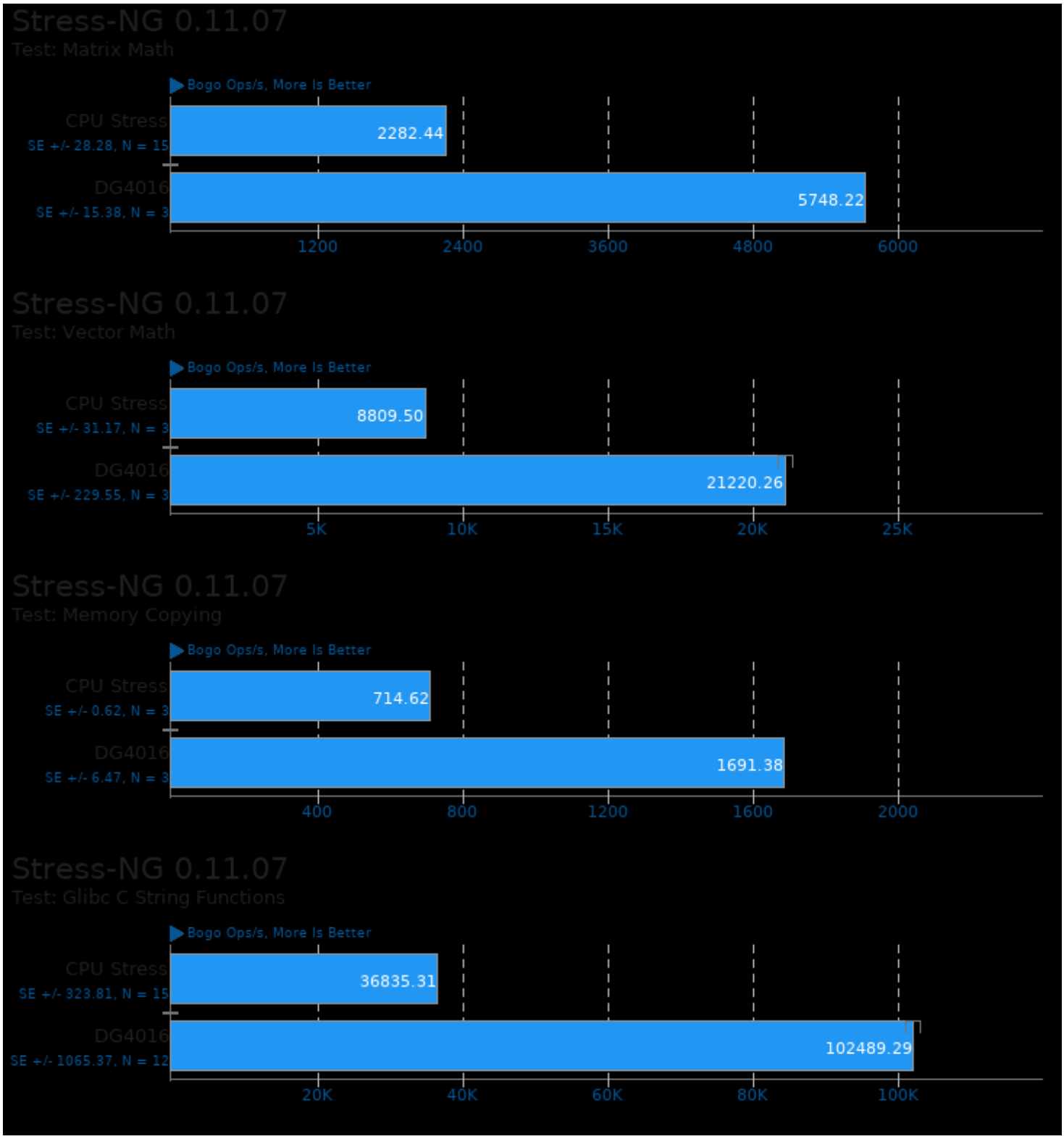
Test: Forking

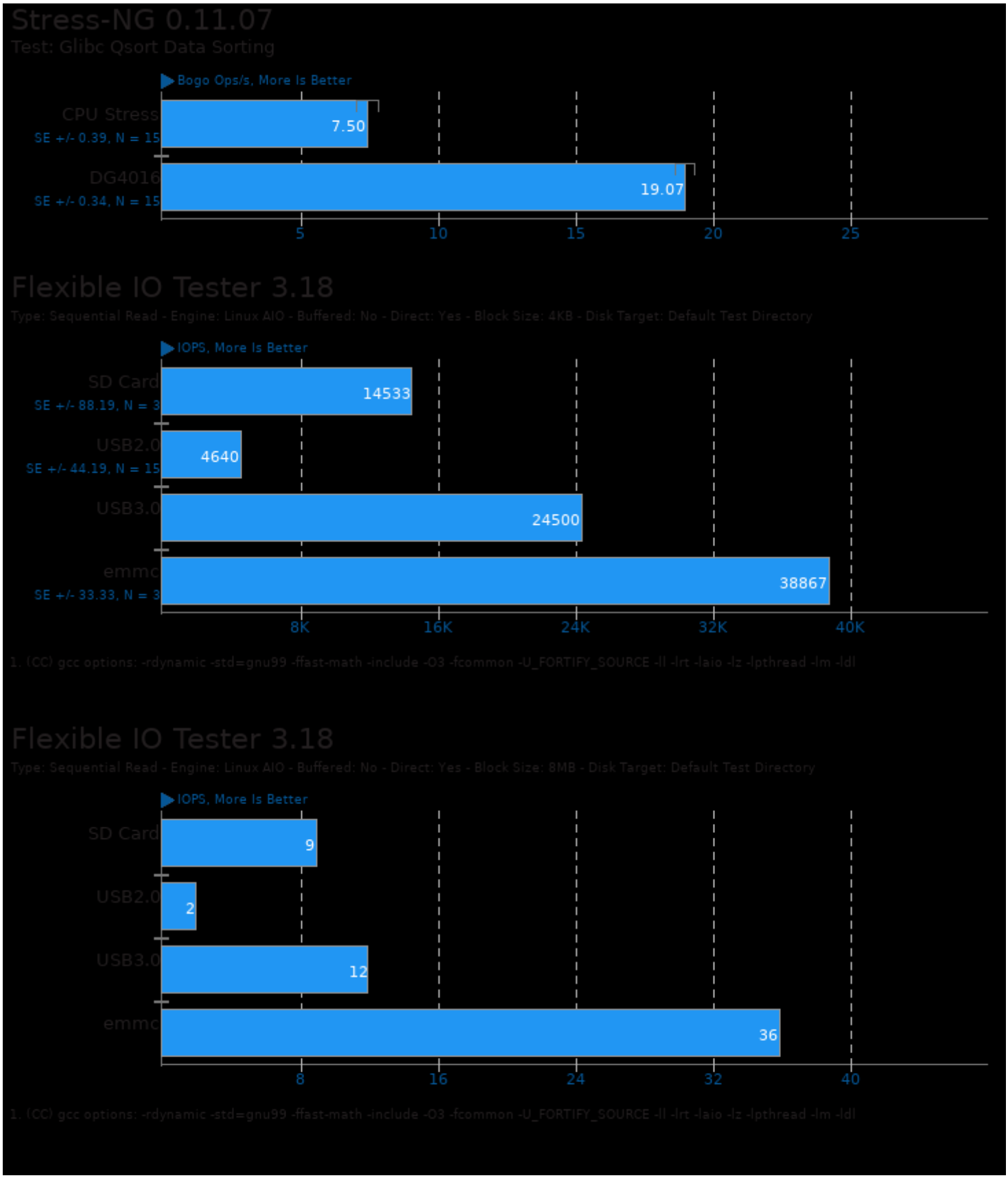


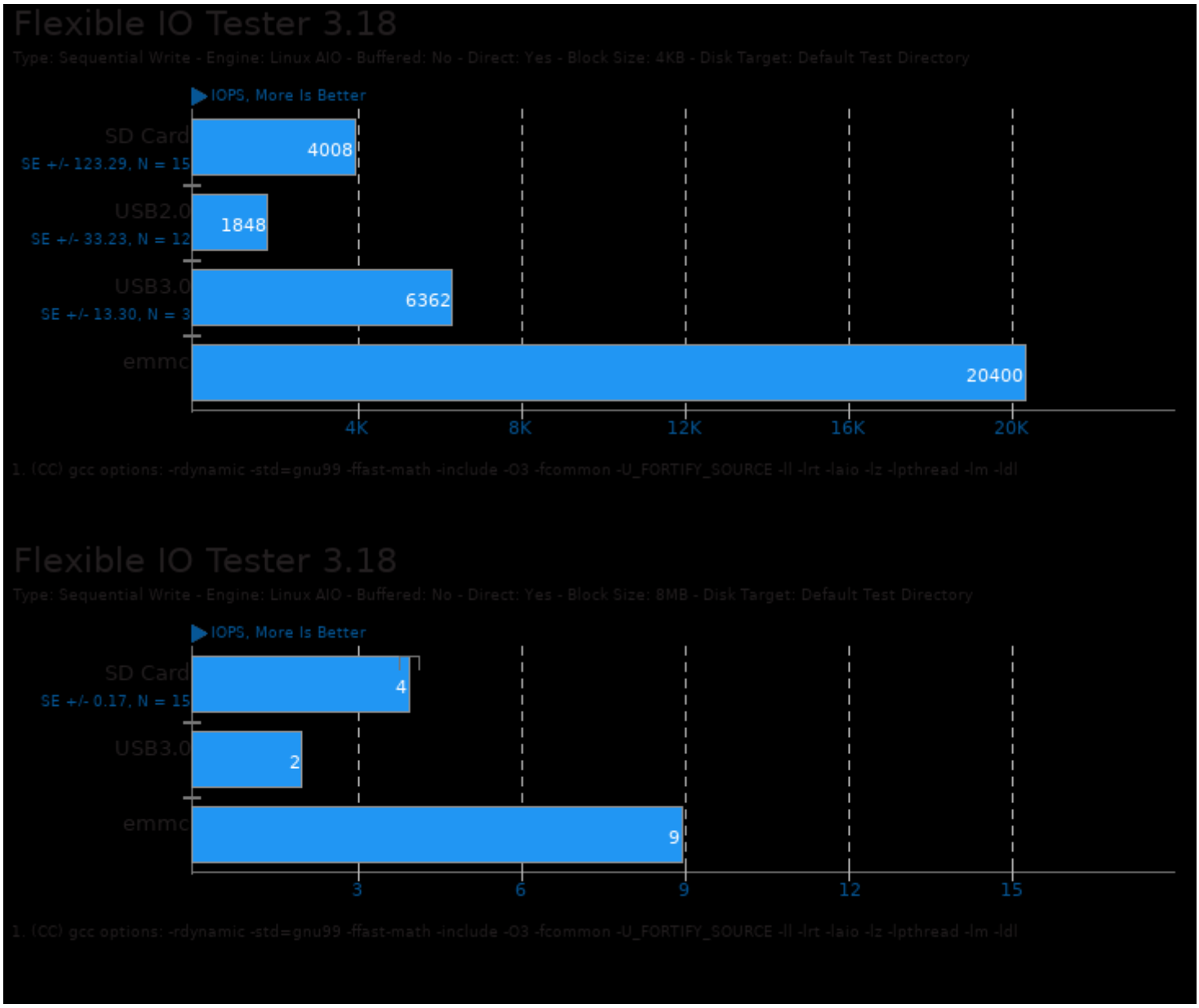
Stress-NG 0.11.07

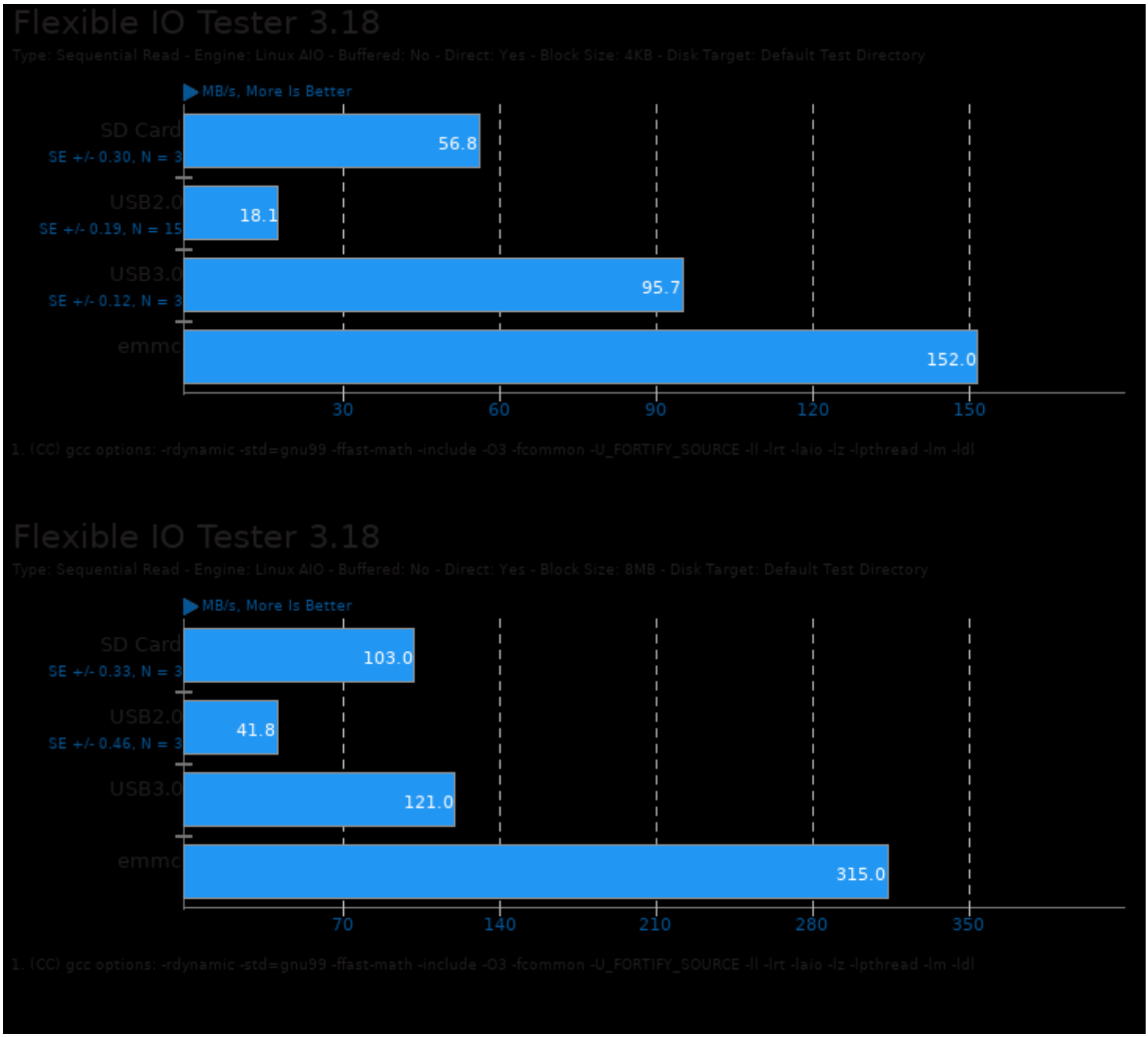
Test: CPU Stress




Stress-NG 0.11.07
Test: Matrix Math
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 28.28, N = 15
2282.44
DG4016
SE +/- 15.38, N = 3
5748.22
1200
2400
3600
4800
6000
Stress-NG 0.11.07
Test: Vector Math
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 31.17, N = 3
8809.50
DG4016
SE +/- 229.55, N = 3
21220.26
5K
10K
15K
20K
25K
Stress-NG 0.11.07
Test: Memory Copying
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 0.62, N = 3
714.62
DG4016
SE +/- 6.47, N = 3
1691.38
400
800
1200
1600
2000
Stress-NG 0.11.07
Test: Glibc C String Functions
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 323.81, N = 15
36835.31
DG4016
SE +/- 1065.37, N = 12
102489.29
20K
40K
60K
80K
100K

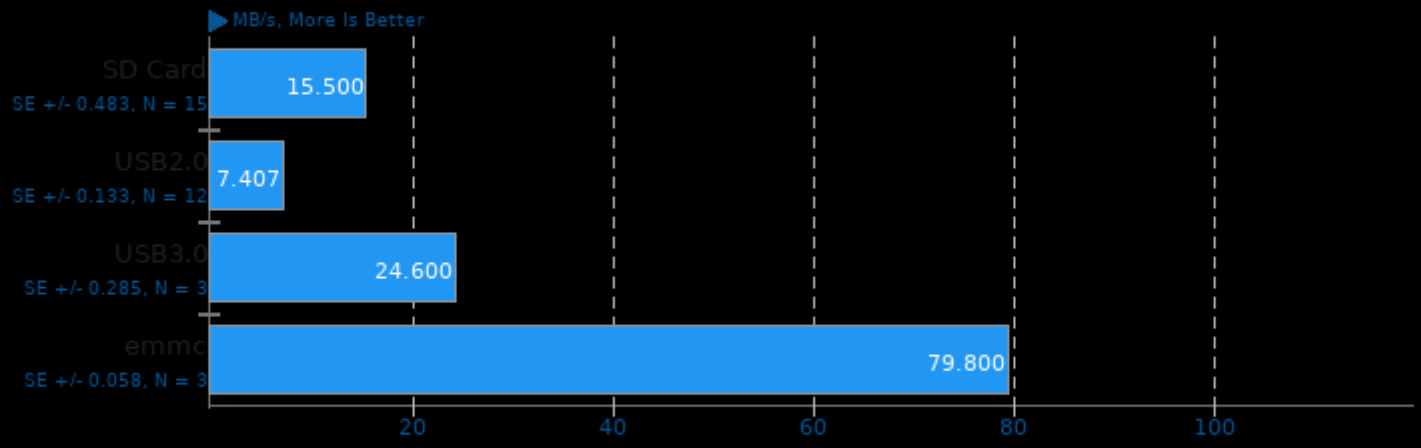

Stress-NG 0.11.07
Test: Glibc Qsort Data Sorting
Bogo Ops/s, More Is Better
CPU Stress
SE +/- 0.39, N = 15
7.50
DG4016
SE +/- 0.34, N = 15
19.07
5
10
15
20
25
Flexible IO Tester 3.18
Type: Sequential Read - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory
IOPS, More Is Better
SD Card
SE +/- 88.19, N = 3
14533
USB2.0
SE +/- 44.19, N = 15
4640
USB3.0
24500
emmc
SE +/- 33.33, N = 3
38867
8K
16K
24K
32K
40K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -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
SD Card
9
USB2.0
2
USB3.0
12
emmc
36
8
16
24
32
40
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -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
SD Card
SE +/- 123.29, N = 15
4008
USB2.0
SE +/- 33.23, N = 12
1848
USB3.0
SE +/- 13.30, N = 3
6362
emmc
20400
4K
8K
12K
16K
20K
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -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
SD Card
SE +/- 0.17, N = 15
4
USB3.0
2
emmc
9
3
6
9
12
15
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -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
MB/s, More Is Better
SD Card
SE +/- 0.30, N = 3
56.8
USB2.0
SE +/- 0.19, N = 15
18.1
USB3.0
SE +/- 0.12, N = 3
95.7
emmc
152.0
30
60
90
120
150
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -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
SD Card
SE +/- 0.33, N = 3
103.0
USB2.0
SE +/- 0.46, N = 3
41.8
USB3.0
121.0
emmc
315.0
70
140
210
280
350
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

Flexible IO Tester 3.18

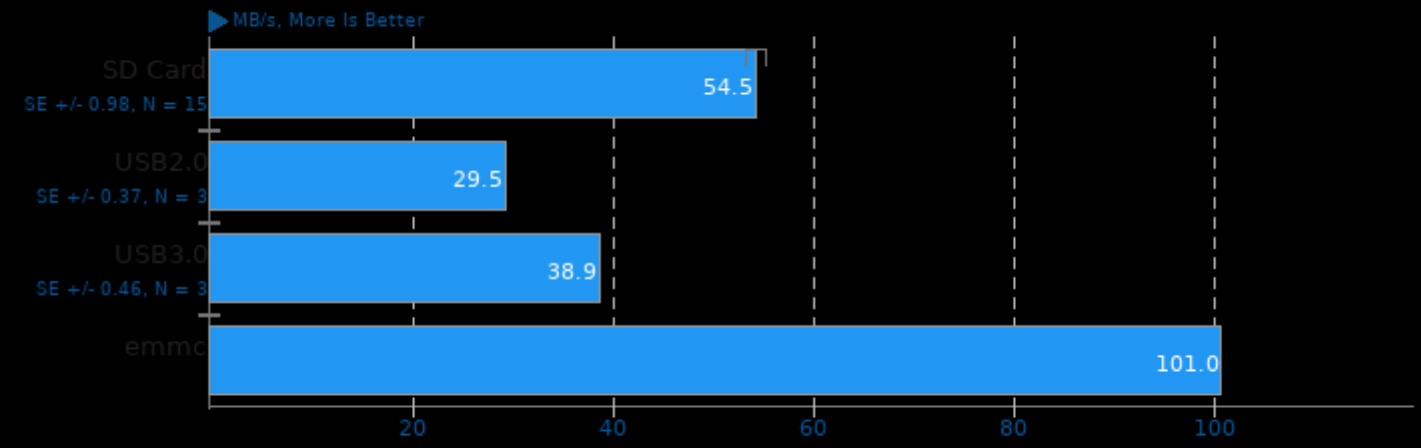
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 4KB - Disk Target: Default Test Directory



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

Flexible IO Tester 3.18

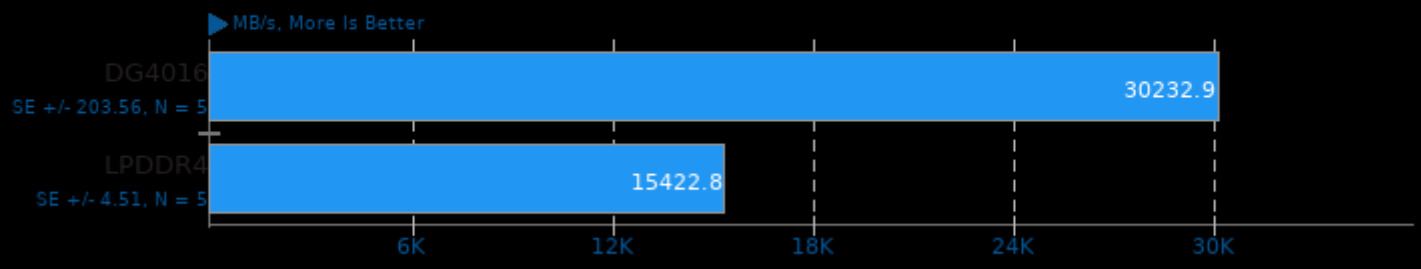
Type: Sequential Write - Engine: Linux AIO - Buffered: No - Direct: Yes - Block Size: 8MB - Disk Target: Default Test Directory

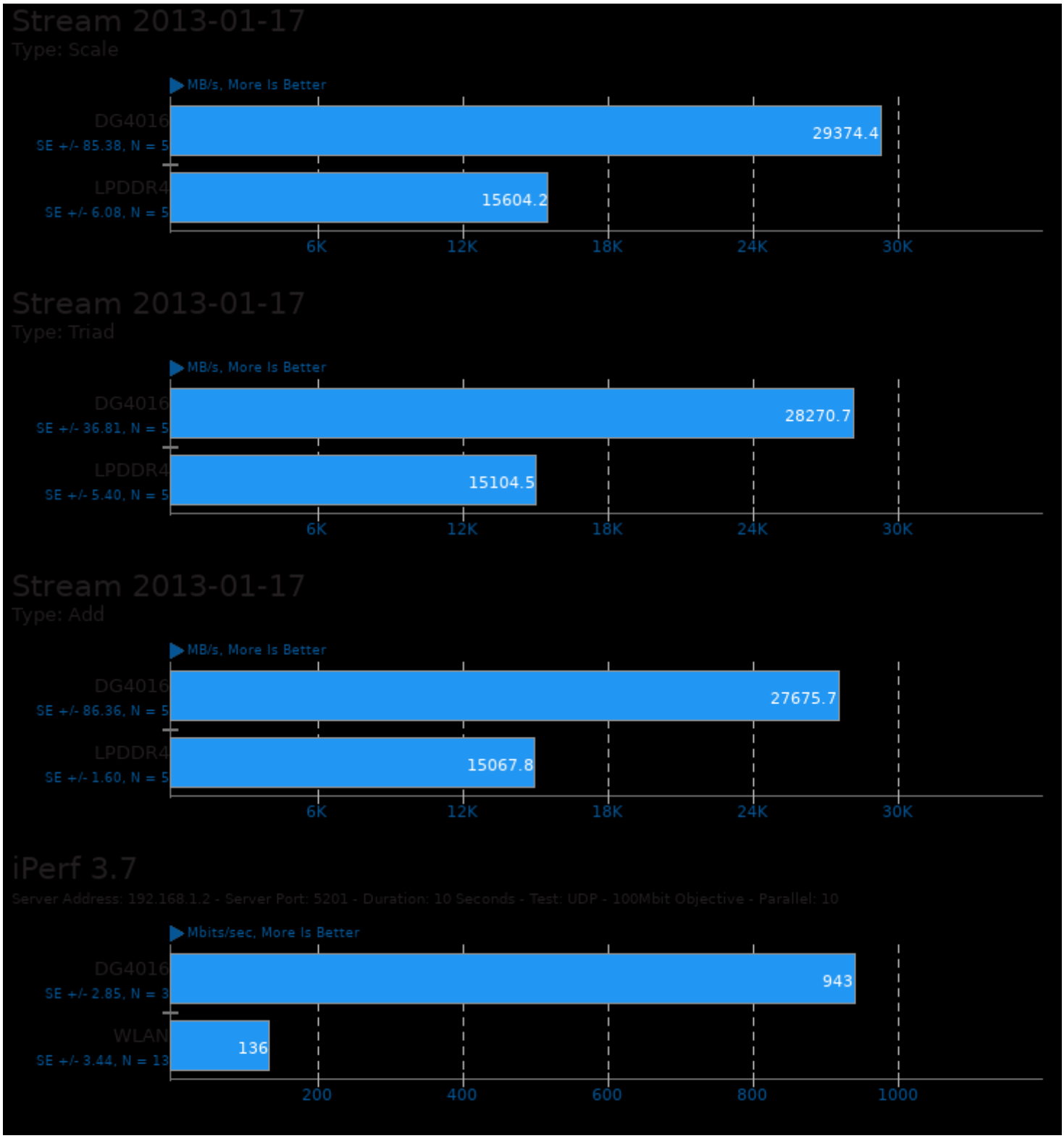


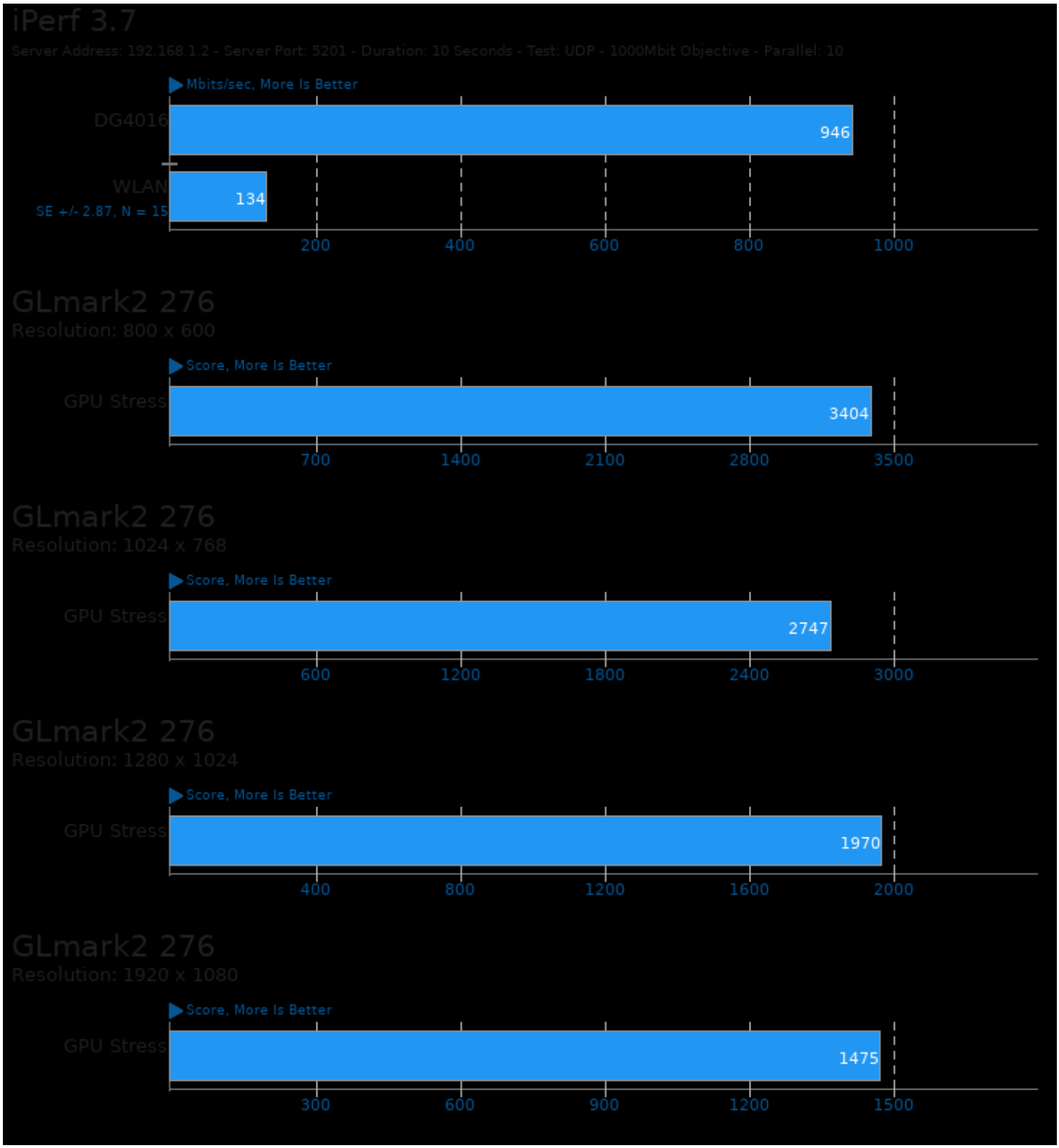
1. (CC) gcc options: -rdynamic -std=gnu99 -ffast-math -include -O3 -fcommon -U_FORTIFY_SOURCE -ll -lrt -laio -lz -lpthread -lm -ldl

Stream 2013-01-17

Type: Copy




Stream 2013-01-17
Type: Scale
MB/s, More Is Better
DG4016
SE +/- 85.38, N = 5
29374.4
LPDDR4
SE +/- 6.08, N = 5
15604.2
6K
12K
18K
24K
30K
Stream 2013-01-17
Type: Triad
MB/s, More Is Better
DG4016
SE +/- 36.81, N = 5
28270.7
LPDDR4
SE +/- 5.40, N = 5
15104.5
6K
12K
18K
24K
30K
Stream 2013-01-17
Type: Add
MB/s, More Is Better
DG4016
SE +/- 86.36, N = 5
27675.7
LPDDR4
SE +/- 1.60, N = 5
15067.8
6K
12K
18K
24K
30K
iPerf 3.7
Server Address: 192.168.1.2 - Server Port: 5201 - Duration: 10 Seconds - Test: UDP - 100Mbit Objective - Parallel: 10
Mbits/sec, More Is Better
DG4016
SE +/- 2.85, N = 3
943
WLAN
SE +/- 3.44, N = 13
136
200
400
600
800
1000



This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 12:01.