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intel i3 12100f cpu stress test v1.1

Intel Core i3-12100F testing with a Gigabyte H610I DDR4 (F3 BIOS) and ASUS NVIDIA NV106 2GB on Debian 11 via the Phoronix Test Suite.

Automated Executive Summary

i3-12100F Debian 11 had the most wins, coming in first place for 75% of the tests.

Based on the geometric mean of all complete results, the fastest (i3-12100F Debian 11) was 1.096x the speed of the slowest (intel i3 v1.1).

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

Stress-NG (Test: MMAP) at 1.945x
Stress-NG (Test: Malloc) at 1.833x
Stress-NG (Test: Memory Copying) at 1.393x
Stress-NG (Test: NUMA) at 1.384x
Stress-NG (Test: Context Switching) at 1.356x
Stress-NG (Test: CPU Cache) at 1.336x
Stress-NG (Test: MEMFD) at 1.334x
Stress-NG (Test: Matrix Math) at 1.143x
Stress-NG (Test: SENDFILE) at 1.106x

Stress-NG (Test: Glibc C String Functions) at 1.087x.

Test Systems:

intel i3 v1.1

Processor: Intel Core i3-12100F @ 5.50GHz (4 Cores / 8 Threads), Motherboard: ASRock B660M-HDV (3.02 BIOS), Chipset: Intel Device 7aa7, Memory: 16GB, Disk: 500GB KINGSTON SNVS500G + 1000GB Transcend, Graphics: NVIDIA GeForce RTX 3050 8GB, Audio: Realtek ALC897, Monitor: DELL P2414H, Network: Intel

OS: Linuxmint 20.3, Kernel: 5.4.0-104-generic (x86_64), Desktop: Cinnamon 5.2.7, Display Server: X Server 1.20.13, Display Driver: NVIDIA 510.47.03, OpenGL: 4.6.0, Vulkan: 1.3.194, Compiler: GCC 9.4.0 + LLVM 10.0.0 + CUDA 11.6, File-System: ext4, Screen Resolution: 1920x1080

Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-yTrUTS/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave (EPP: balance_performance) - CPU Microcode: 0x18 - Thermald 1.9.1
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

i3-12100F Debian 11

Processor: Intel Core i3-12100F @ 5.50GHz (4 Cores / 8 Threads), Motherboard: Gigabyte H610I DDR4 (F3 BIOS), Chipset: Intel Device 7aa7, Memory: 16GB, Disk: 128GB INTEL SSDSC2KW12, Graphics: ASUS NVIDIA NV106 2GB, Audio: Realtek ALC897, Monitor: 220P4LPY, Network: Intel

OS: Debian 11, Kernel: 5.10.0-14-amd64 (x86_64), Desktop: GNOME Shell 3.38.6, Display Server: X Server 1.20.11, Display Driver: nouveau, OpenGL: 4.3 Mesa 20.3.5, Vulkan: 1.0.2, Compiler: GCC 10.2.1 20210110, File-System: ext4, Screen Resolution: 1680x1050

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-mutex --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-10-Km9U7s/gcc-10-10.2.1/debian/tmp-gcn/usr,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-build-config=bootstrap-lto-lean --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: intel_pstate powersave (EPP: balance_performance) - CPU Microcode: 0x18
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	intel i3 v1.1	i3-12100F Debian 11

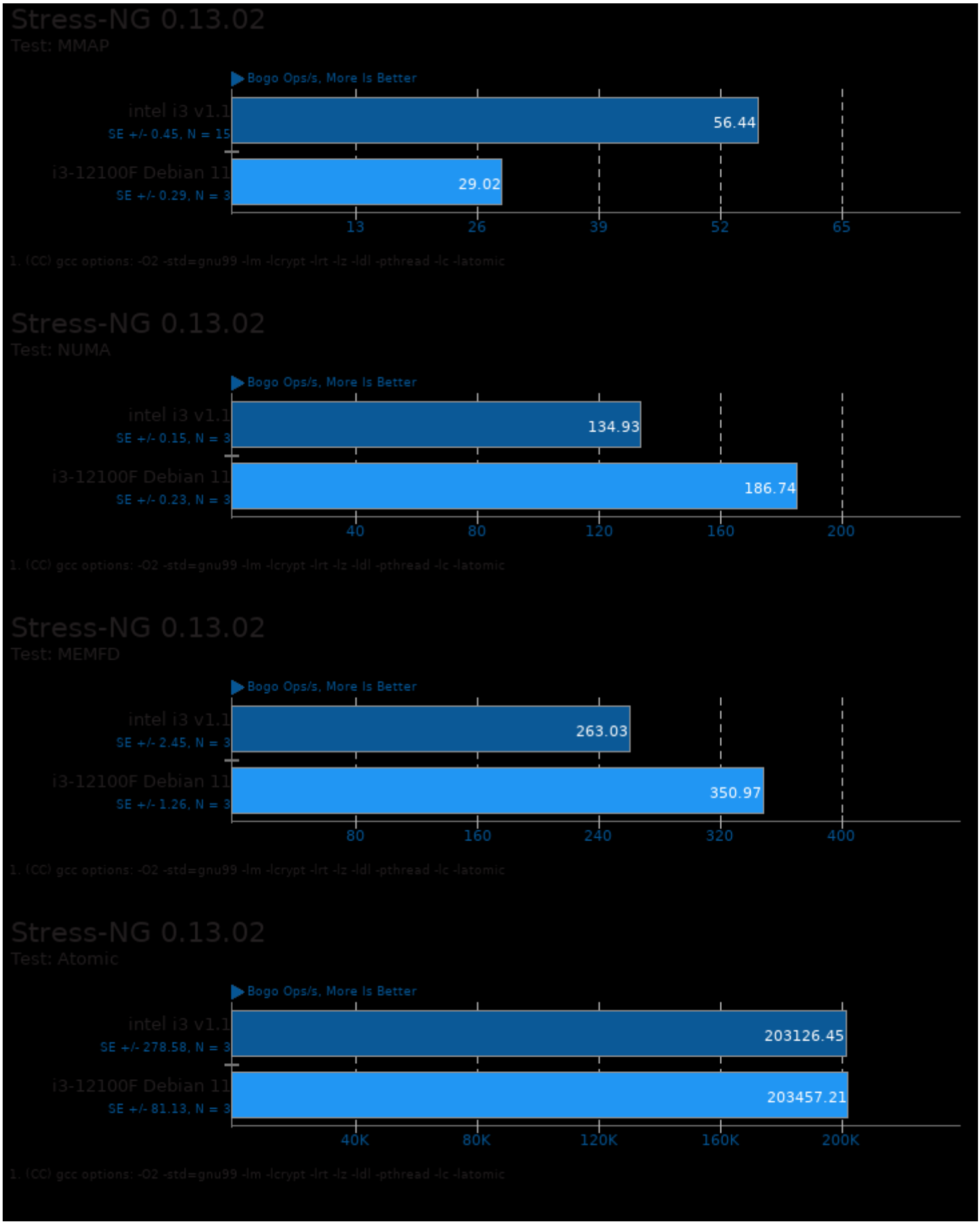
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Stress-NG - MMAP (Bogo Ops/s)	**56.44**	**29.02**
Normalized	100%	51.42%
Standard Deviation	3.1%	1.8%
Stress-NG - NUMA (Bogo Ops/s)	**134.93**	**186.74**
Normalized	72.26%	100%
Standard Deviation	0.2%	0.2%
Stress-NG - MEMFD (Bogo Ops/s)	**263.03**	**350.97**
Normalized	74.94%	100%
Standard Deviation	1.6%	0.6%
Stress-NG - Atomic (Bogo Ops/s)	**203126**	**203457**
Normalized	99.84%	100%
Standard Deviation	0.2%	0.1%
Stress-NG - Crypto (Bogo Ops/s)	**1139**	**1213**
Normalized	93.85%	100%
Standard Deviation	0.1%	0.1%
Stress-NG - Malloc (Bogo Ops/s)	**22388851**	**41047869**
Normalized	54.54%	100%
Standard Deviation	0.2%	0.1%
Stress-NG - RdRand (Bogo Ops/s)	**81923**	**82071**
Normalized	99.82%	100%
Standard Deviation	0.1%	0.1%
Stress-NG - Forking (Bogo Ops/s)	**40554**	**39601**
Normalized	100%	97.65%
Standard Deviation	1.9%	2.9%
Stress-NG - SENDFILE (Bogo Ops/s)	**117973**	**130495**
Normalized	90.4%	100%
Standard Deviation	0.9%	0.1%
Stress-NG - CPU Cache (Bogo Ops/s)	**152.85**	**204.22**
Normalized	74.85%	100%
Standard Deviation	2.3%	2%
Stress-NG - CPU Stress (Bogo Ops/s)	**8404**	**8706**
Normalized	96.53%	100%
Standard Deviation	0.6%	0.2%
Stress-NG - Semaphores (Bogo Ops/s)	**710643**	**696282**
Normalized	100%	97.98%
Standard Deviation	1.2%	0.1%
Stress-NG - Matrix Math (Bogo Ops/s)	**28866**	**33000**
Normalized	87.47%	100%
Standard Deviation	0.4%	0.4%
Stress-NG - Vector Math (Bogo Ops/s)	**20275**	**21497**
Normalized	94.32%	100%
Standard Deviation	1.5%	0.1%
Stress-NG - Memory Copying (Bogo Ops/s)	**1784**	**2485**
Normalized	71.77%	100%
Standard Deviation	0.7%	1.2%
Stress-NG - Socket Activity (Bogo Ops/s)	**5236**	**4755**
Normalized	100%	90.82%
Standard Deviation	2.3%	10.7%
Stress-NG - Context Switching (Bogo Ops/s)	**2231086**	**3025362**
Normalized	73.75%	100%
Standard Deviation	0.3%	1%
Stress-NG - G.C.S.F (Bogo Ops/s)	**808480**	**878927**
Normalized	91.98%	100%
Standard Deviation	0.5%	0.2%
Stress-NG - G.Q.D.S (Bogo Ops/s)	**88.62**	**91.09**

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Normalized	97.29%	100%
Standard Deviation	1%	0.9%
Stress-NG - S.V.M.P (Bogo Ops/s)	**7111422**	**6996064**
Normalized	100%	98.38%
Standard Deviation	0.5%	0.2%
Stress-NG - IO_uring (Bogo Ops/s)		30747
Standard Deviation		4.1%

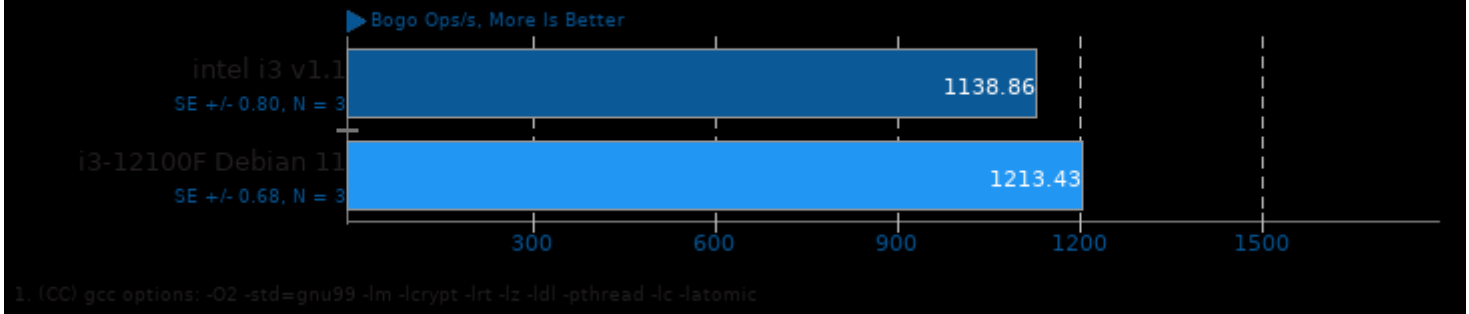
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Stress-NG 0.13.02

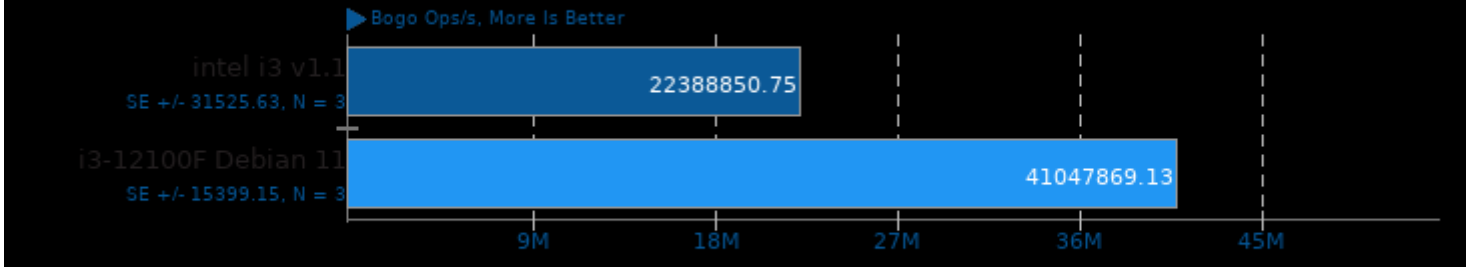
Test: Crypto



1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

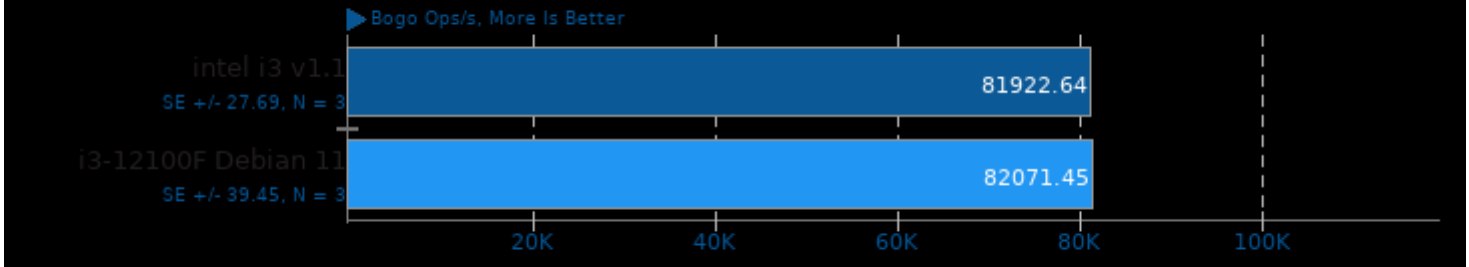
Test: Malloc



1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

Stress-NG 0.13.02

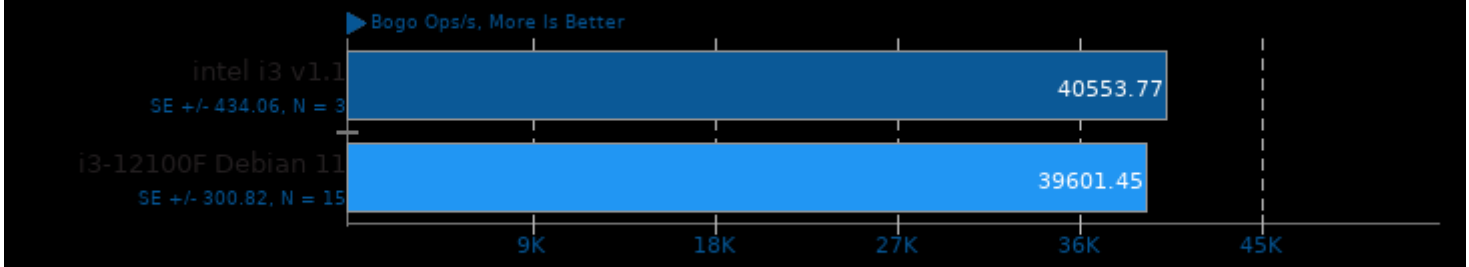
Test: RdRand



1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

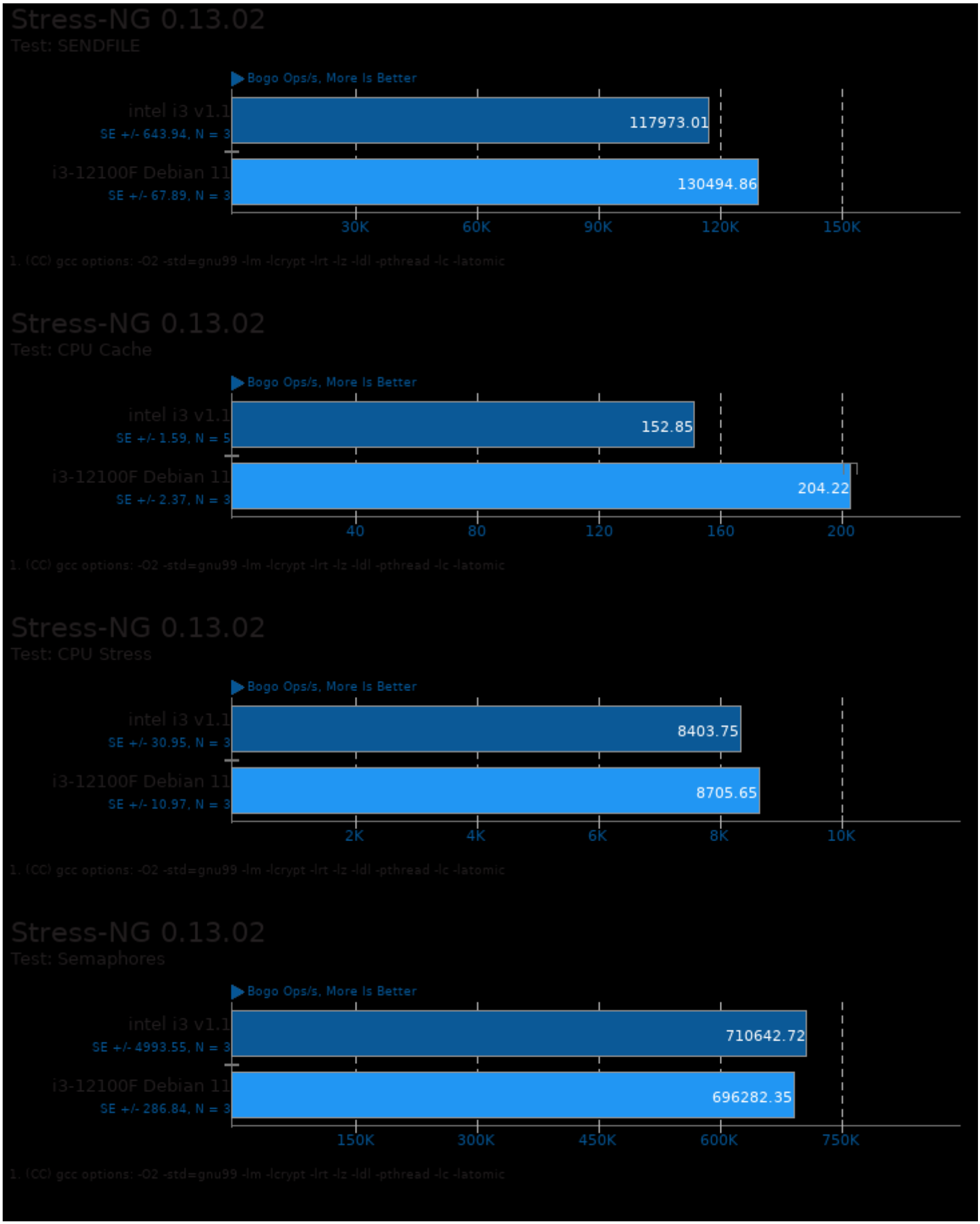
Stress-NG 0.13.02

Test: Forking

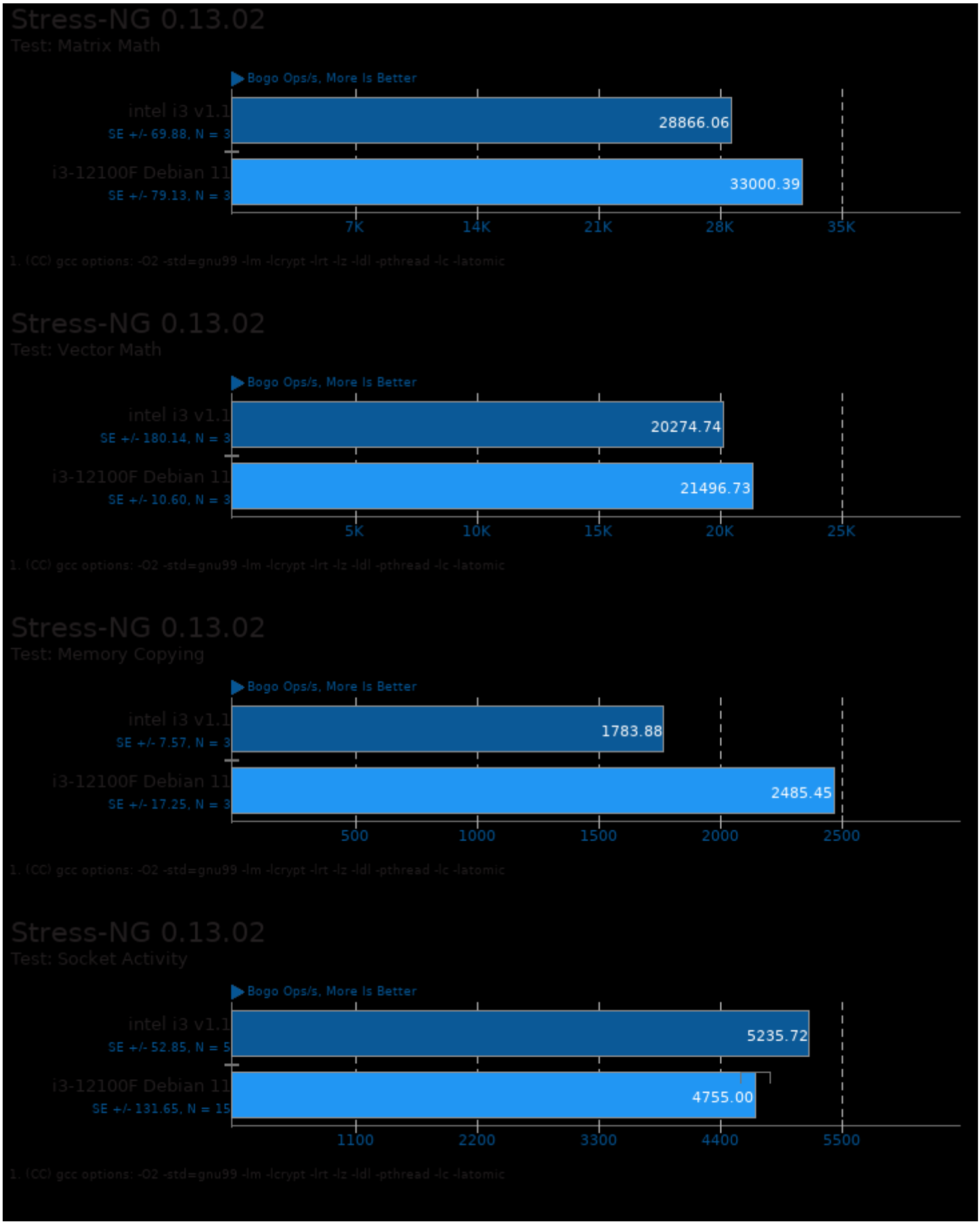


1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -pthread -lc -latomic

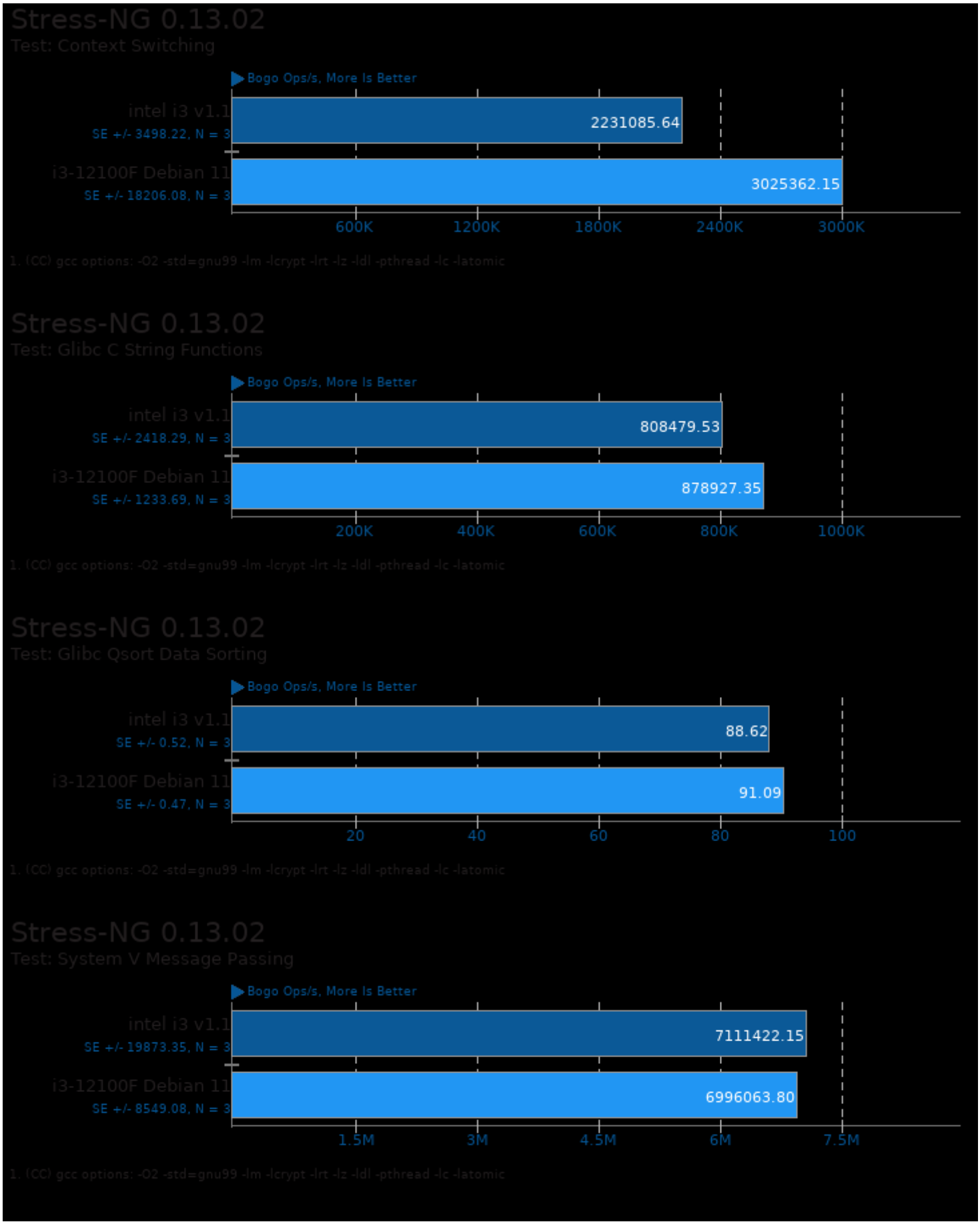
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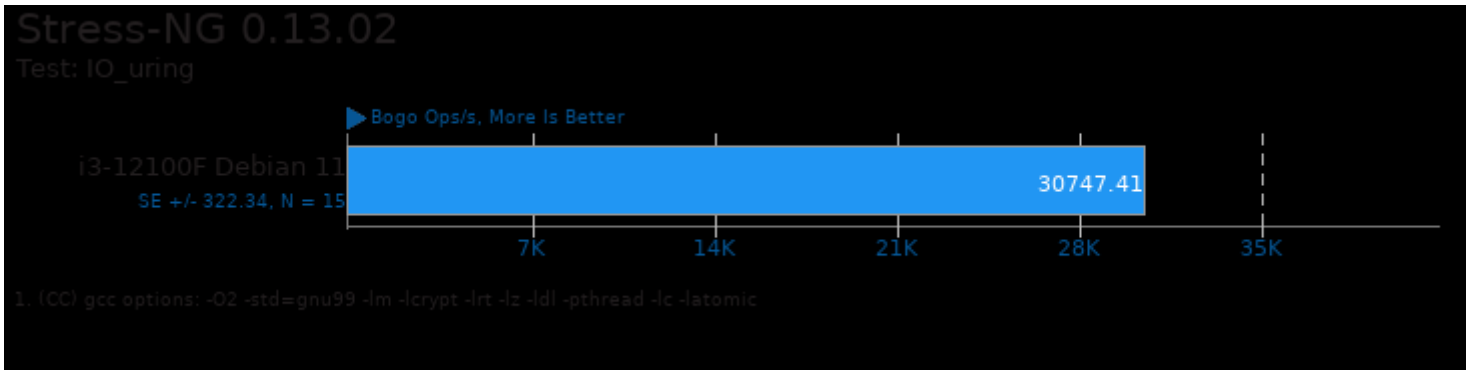
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