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Phoronix_Stress_ng

Phoronix stress-ng test.

Automated Executive Summary

NUC7i5 had the most wins, coming in first place for 95% of the tests.

Based on the geometric mean of all complete results, the fastest (NUC7i5) was 3.232x the speed of the slowest (RockPiX). Phoronix_Stress_ng was 0.754x the speed of NUC7i5, Latte Panda Delta was 0.638x the speed of Phoronix_Stress_ng, RockPiX was 0.643x the speed of Latte Panda Delta.

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

Stress-NG (Test: System V Message Passing) at 6.989x
Stress-NG (Test: Context Switching) at 6.715x
Stress-NG (Test: Socket Activity) at 5.863x
Stress-NG (Test: Glibc C String Functions) at 5.287x
Stress-NG (Test: Glibc Qsort Data Sorting) at 4.95x
Stress-NG (Test: Forking) at 4.941x
Stress-NG (Test: MEMFD) at 4.595x
Stress-NG (Test: Matrix Math) at 3.792x
Stress-NG (Test: SENDFILE) at 3.589x

Stress-NG (Test: RdRand) at 3.371x.

Test Systems:

Phoronix_Stress_ng

Processor: Intel Core m3-8100Y @ 3.40GHz (2 Cores / 4 Threads), Motherboard: LattePanda Alpha (CDJQ-BS-7-S70KR310-KF65A-101-I BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 1 x 8192 MB LPDDR3-1600MT/s, Disk: 63GB HCG8a4, Graphics: Intel UHD 615 (900MHz), Audio: Realtek ALC269VC, Monitor: VE228, Network: Realtek RTL8111/8168/8411 + Intel 3165

OS: Ubuntu 20.04, Kernel: 5.11.0-44-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server, OpenGL: 4.6 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, 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-HskZEa/gcc-9-9.3.0/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: 0xea - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Not affected

Latte Panda Delta

Processor: Intel Celeron N4100 @ 2.40GHz (4 Cores), Motherboard: LattePanda Delta (CDJQ-BI-7-S70GR200-H BIOS), Chipset: Intel Gemini Lake, Memory: 2 x 2048 MB LPDDR4-2133MT/s ABCD 123456789012345678, Disk: 31GB DA4032, Graphics: Intel UHD 600 GLK 2 3GB (700MHz), Audio: Realtek ALC269VC, Monitor: VE228, Network: Realtek RTL8111/8168/8411 + Intel Device 31dc

OS: Ubuntu 20.04, Kernel: 5.11.0-44-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server, Vulkan: 1.2.145, Compiler: GCC 9.3.0, 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-HskZEa/gcc-9-9.3.0/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_cpufreq ondemand - CPU Microcode: 0x36 - Thermald 1.9.1
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Mitigation of PTI + 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

NUC7i5

Processor: Intel Core i5-7300U @ 3.50GHz (2 Cores / 4 Threads), Motherboard: Intel NUC7i5DNB (DNKBLi5v.86A.0069.2020.0610.1823 BIOS), Chipset: Intel Xeon E3-1200 v6/7th, Memory: 1 x 8192 MB DDR4-2400MT/s, Disk: 240GB INTEL SSDSCKKB24, Graphics: Intel HD 620 KBL GT2 3GB (1100MHz), Audio: Intel Sunrise Point-LP HD Audio, Monitor: VE228, Network: Intel I219-LM + Intel 8265 / 8275

OS: Ubuntu 20.04, Kernel: 5.11.0-44-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server, OpenGL: 4.6 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, 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-HskZEa/gcc-9-9.3.0/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: 0xea - Thermald 1.9.1
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + 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 Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

RockPiX

Processor: Intel Atom x5-Z8350 @ 1.92GHz (4 Cores), Motherboard: Radxa ROCK Pi X (5.11 BIOS), Chipset: Intel Atom/Celeron/Pentium, Memory: 1 x 4096 MB DDR3-1600MT/s 00000000, Disk: 62GB SLD64G, Graphics: Intel HD 2GB (500MHz), Monitor: VE228, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 20.04, Kernel: 5.11.0-37-generic (x86_64), Desktop: GNOME Shell 3.36.9, Display Server: X Server, OpenGL: 4.6 Mesa 21.0.3, Vulkan: 1.2.145, Compiler: GCC 9.3.0, File-System: ext4, Screen Resolution: 1920x1080

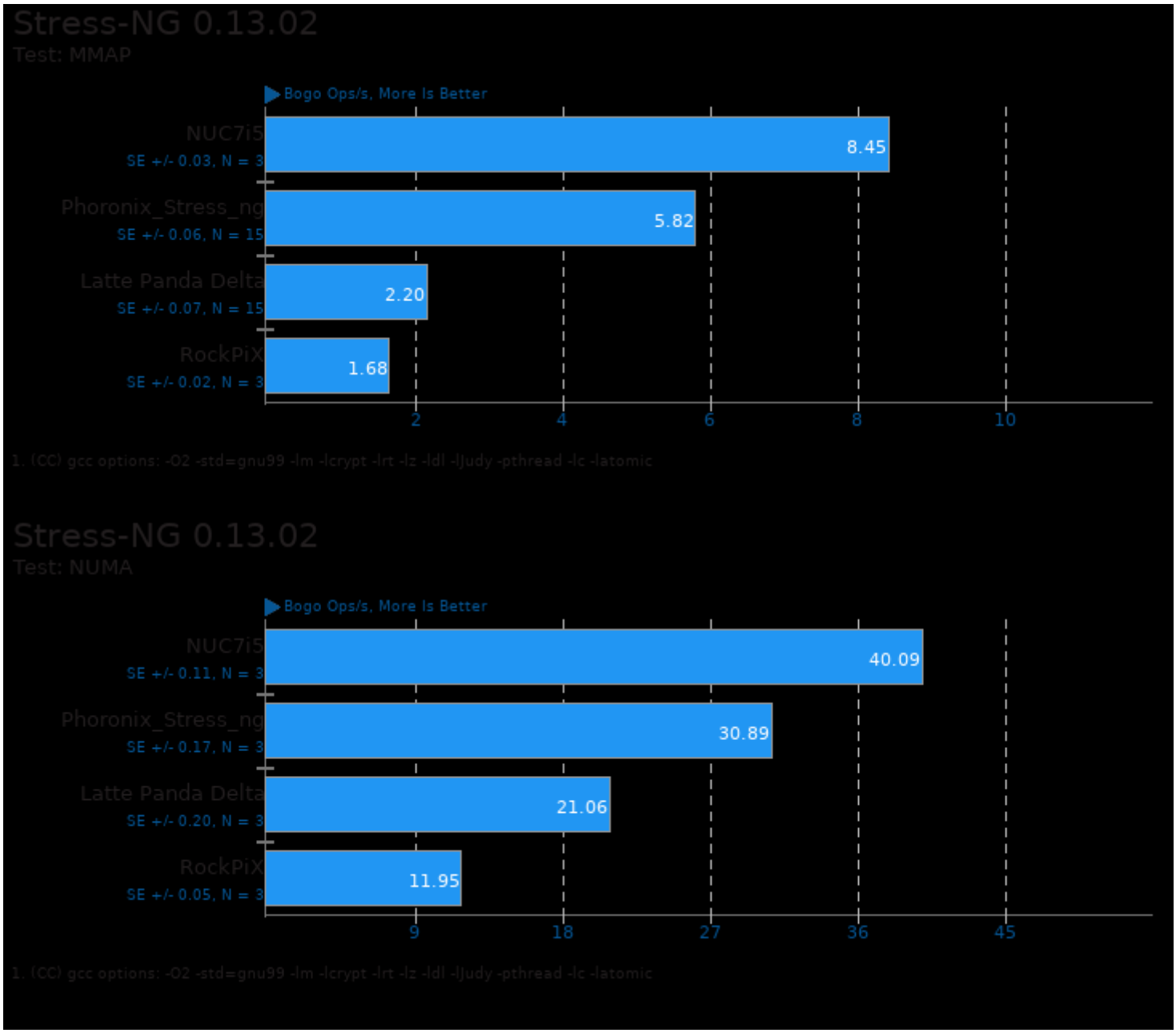
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-HskZEa/gcc-9-9.3.0/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_cpufreq ondemand - CPU Microcode: 0x411 - Thermald 1.9.1
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Mitigation of Clear buffers; SMT disabled + meltdown: Mitigation of PTI + spec_store_bypass: Not affected + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: disabled RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Phoronix_Stress_ng	Latte Panda Delta	NUC7i5	RockPiX
Stress-NG - MMAP (Bogo Ops/s)	5.82	2.20	**8.45**	**1.68**
Normalized	68.88%	26.04%	100%	19.88%
Standard Deviation	4.2%	11.5%	0.7%	1.8%
Stress-NG - NUMA (Bogo Ops/s)	30.89	21.06	**40.09**	**11.95**
Normalized	77.05%	52.53%	100%	29.81%
Standard Deviation	1%	1.7%	0.5%	0.7%
Stress-NG - MEMFD (Bogo Ops/s)	47.86	23.78	**69.34**	**15.09**
Normalized	69.02%	34.29%	100%	21.76%
Standard Deviation	0.4%	2.2%	0.3%	0.4%
Stress-NG - Atomic (Bogo Ops/s)	157331	192828	**204661**	**117313**
Normalized	76.87%	94.22%	100%	57.32%
Standard Deviation	7.5%	2.4%	6%	0.6%
Stress-NG - Crypto (Bogo Ops/s)	285.70	277.90	**376.60**	**150.83**
Normalized	75.86%	73.79%	100%	40.05%
Standard Deviation	0.9%	2.3%	0.2%	0.1%
Stress-NG - Malloc (Bogo Ops/s)	6014265	4274854	**8480361**	**2804412**
Normalized	70.92%	50.41%	100%	33.07%
Standard Deviation	0.2%	1.7%	0.3%	0.9%

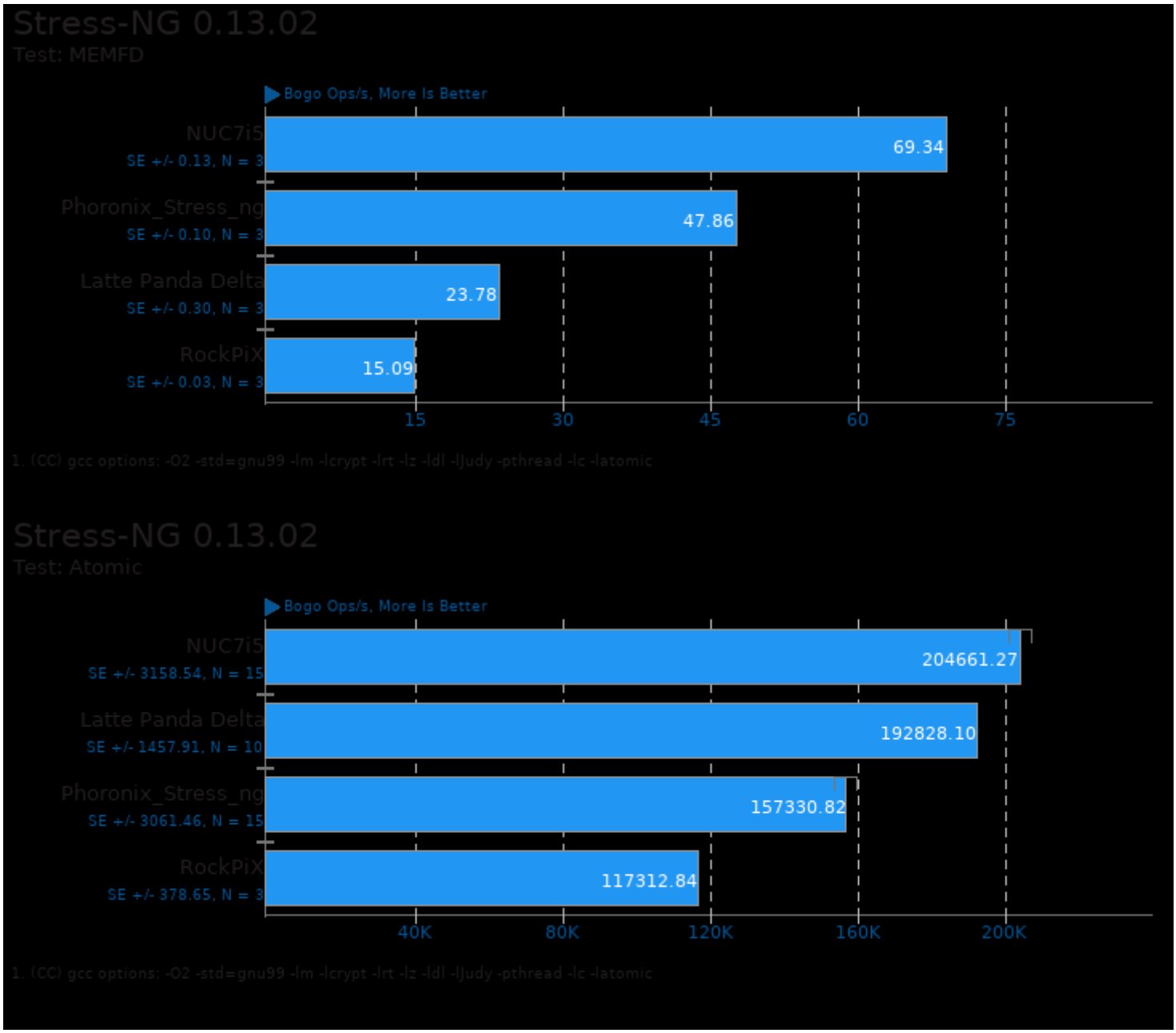
Phoronix_Stress_ng

Stress-NG - RdRand (Bogo Ops/s)	**2994**	**10092**	3677	6367
Normalized	29.67%	100%	36.44%	63.09%
Standard Deviation	0.7%	0.3%	0.2%	0.5%
Stress-NG - Forking (Bogo Ops/s)	8691	5737	**11407**	**2309**
Normalized	76.19%	50.29%	100%	20.24%
Standard Deviation	0.3%	2.2%	0.9%	0.7%
Stress-NG - SENDFILE (Bogo Ops/s)	5363	3478	**6924**	**1929**
Normalized	77.46%	50.24%	100%	27.86%
Standard Deviation	0.1%	3.2%	0.1%	0.2%
Stress-NG - CPU Cache (Bogo Ops/s)	130.70	**72.41**	**203.74**	163.80
Normalized	64.15%	35.54%	100%	80.4%
Standard Deviation	0.4%	13.7%	1.3%	1.3%
Stress-NG - CPU Stress (Bogo Ops/s)	2805	2149	**3605**	**1177**
Normalized	77.79%	59.62%	100%	32.64%
Standard Deviation	1.5%	2.4%	0.8%	0.3%
Stress-NG - Semaphores (Bogo	278233	218817	**287734**	**170322**
Normalized	96.7%	76.05%	100%	59.19%
Standard Deviation	0.5%	0.1%	0.2%	0.2%
Stress-NG - Matrix Math (Bogo Ops/s)	7026	**2377**	**9014**	2632
Normalized	77.94%	26.37%	100%	29.2%
Standard Deviation	1.7%	3.1%	2.4%	0.1%
Stress-NG - Vector Math (Bogo Ops/s)	4702	3620	**6149**	**1894**
Normalized	76.47%	58.87%	100%	30.8%
Standard Deviation	0.1%	2.4%	0%	0.3%
Stress-NG - Memory Copying (Bogo Ops/s)	449.50	251.27	**515.50**	**179.72**
Normalized	87.2%	48.74%	100%	34.86%
Standard Deviation	0.3%	1.9%	0.4%	0.2%
Stress-NG - Socket Activity (Bogo	988.08	304.91	**1369**	**233.50**
Normalized	72.17%	22.27%	100%	17.06%
Standard Deviation	2.6%	2.4%	1.4%	0.7%
Stress-NG - Context Switching (Bogo Ops/s)	408818	146135	**654976**	**97545**
Normalized	62.42%	22.31%	100%	14.89%
Standard Deviation	2.5%	2.5%	0.9%	2.5%
Stress-NG - G.C.S.F (Bogo Ops/s)	170694	95227	**225453**	**42644**
Normalized	75.71%	42.24%	100%	18.91%
Standard Deviation	0.3%	2.3%	0.5%	0.7%
Stress-NG - G.Q.D.S (Bogo Ops/s)	21.15	12.31	**27.87**	**5.63**
Normalized	75.89%	44.17%	100%	20.2%
Standard Deviation	2.5%	2.4%	0.4%	1.2%
Stress-NG - S.V.M.P (Bogo Ops/s)	1265587	581323	**1683813**	**240918**
Normalized	75.16%	34.52%	100%	14.31%
Standard Deviation	1.9%	2.4%	0.3%	1.1%

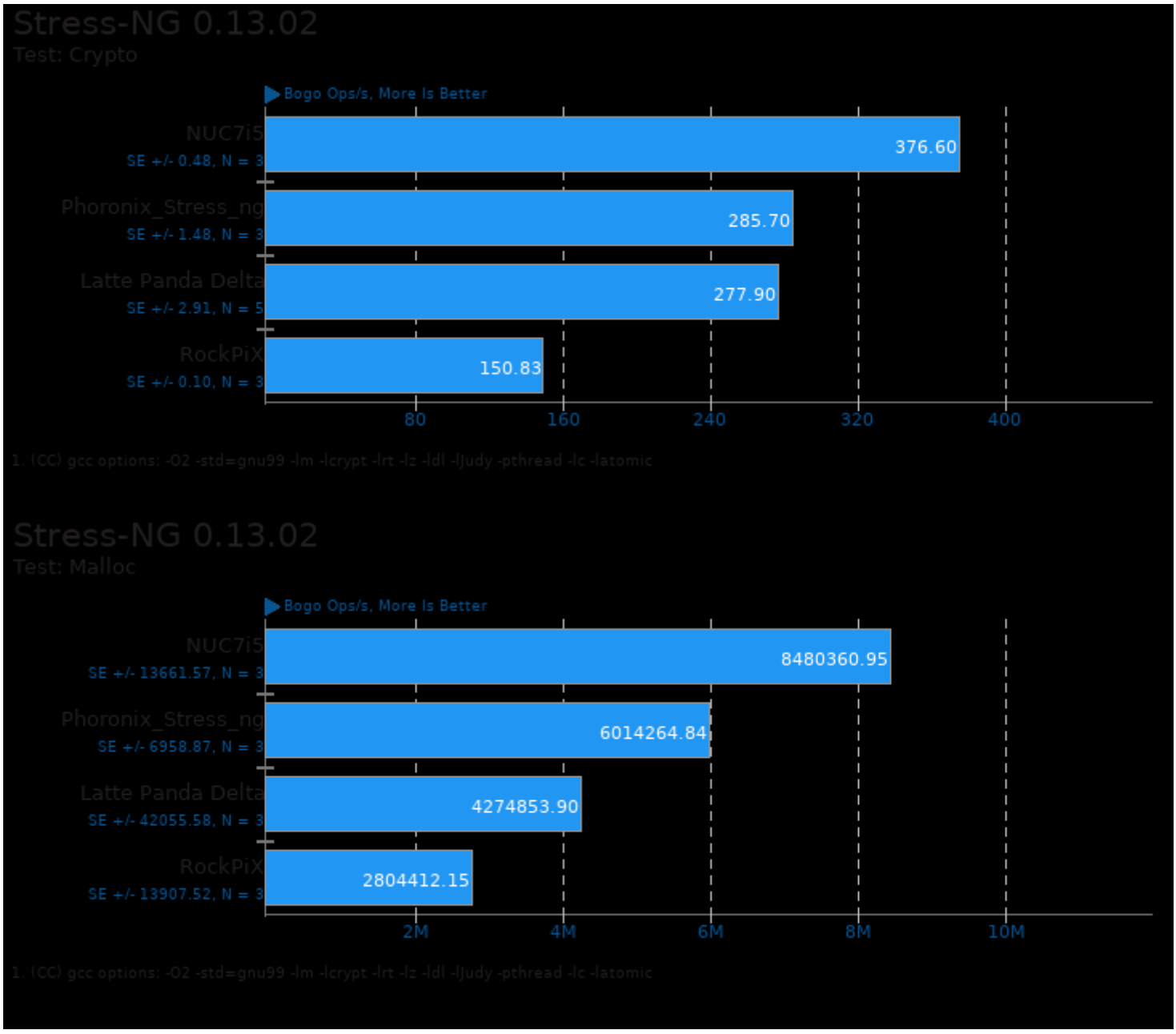
Phoronix_Stress_ng



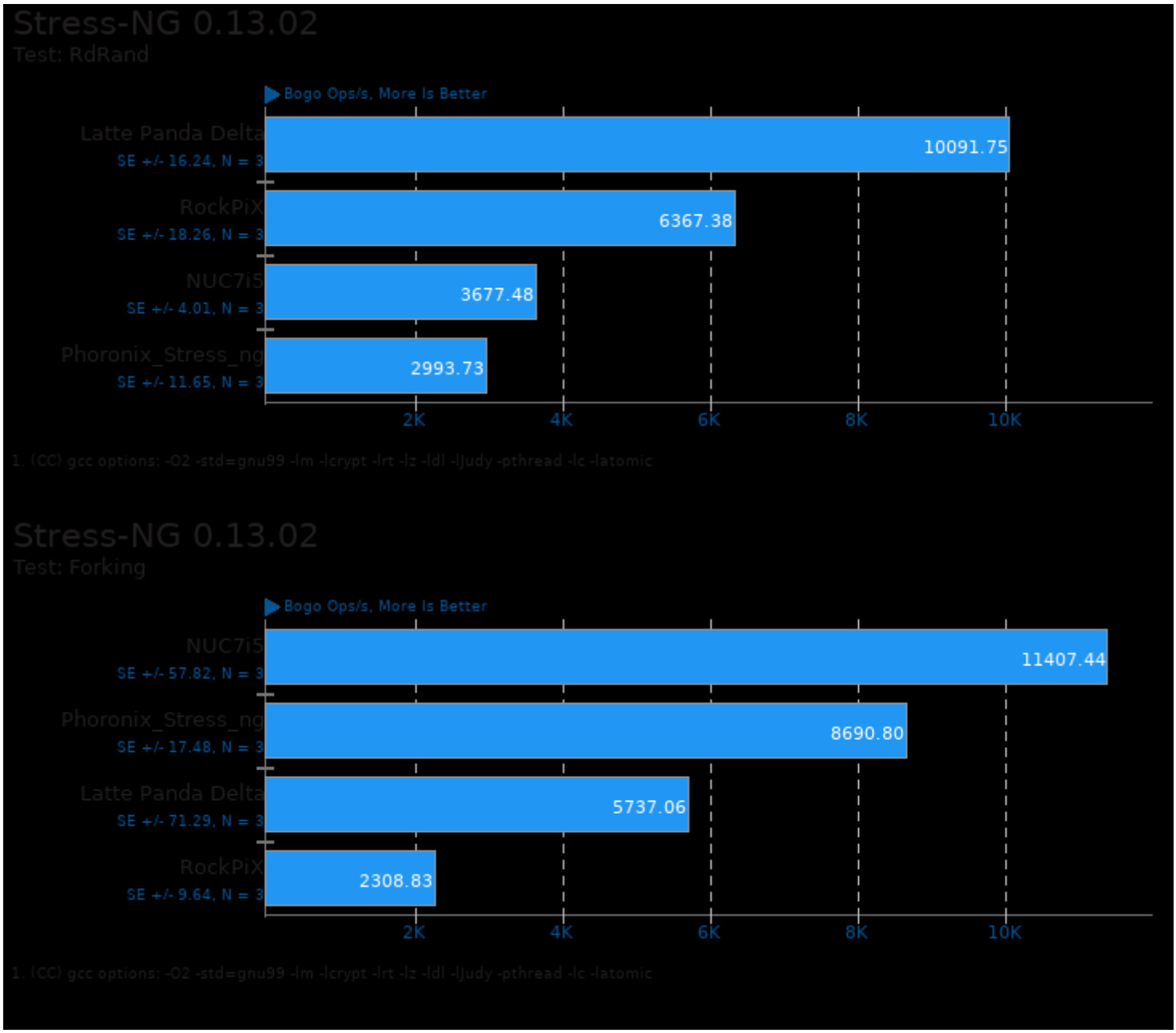
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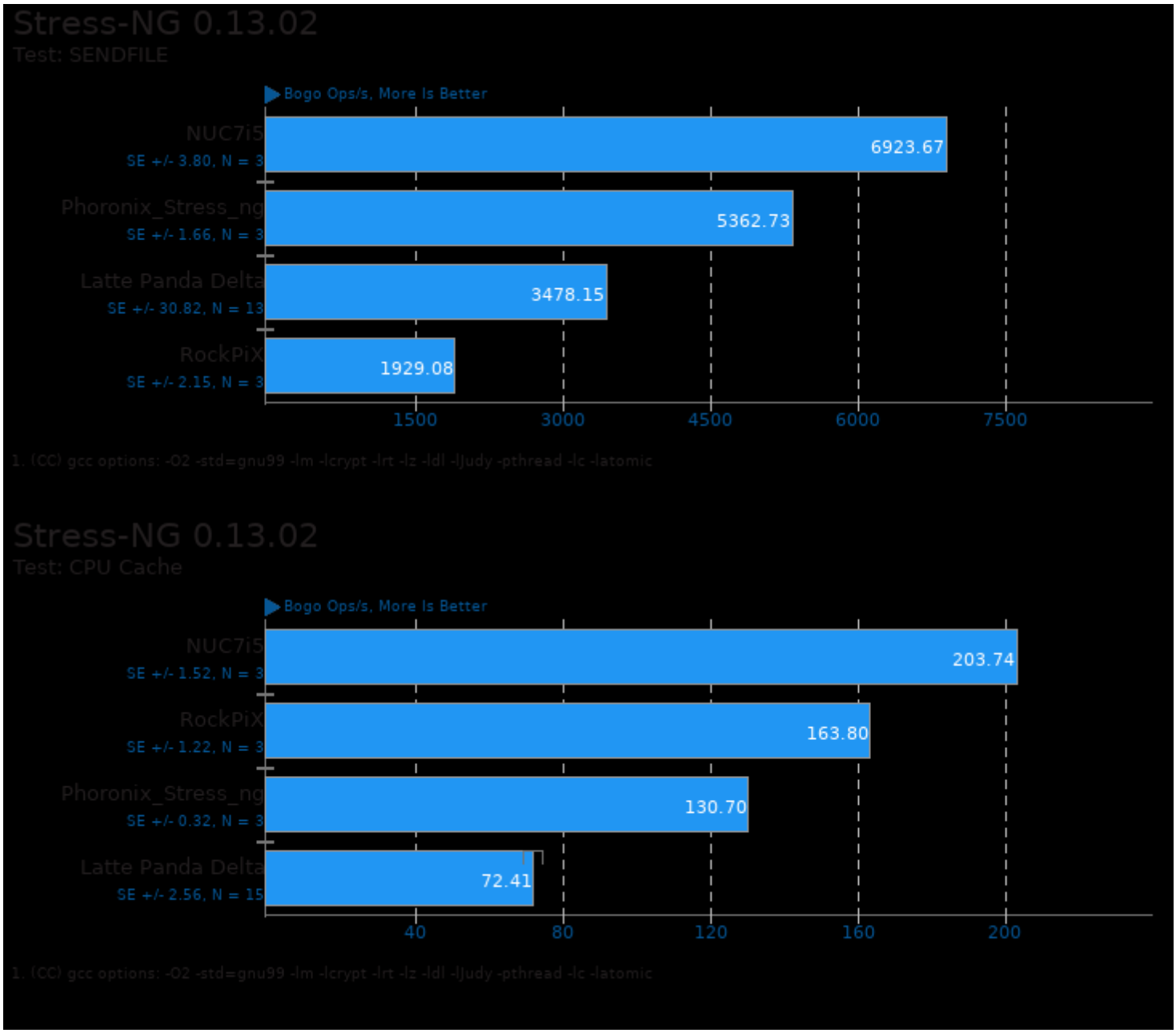


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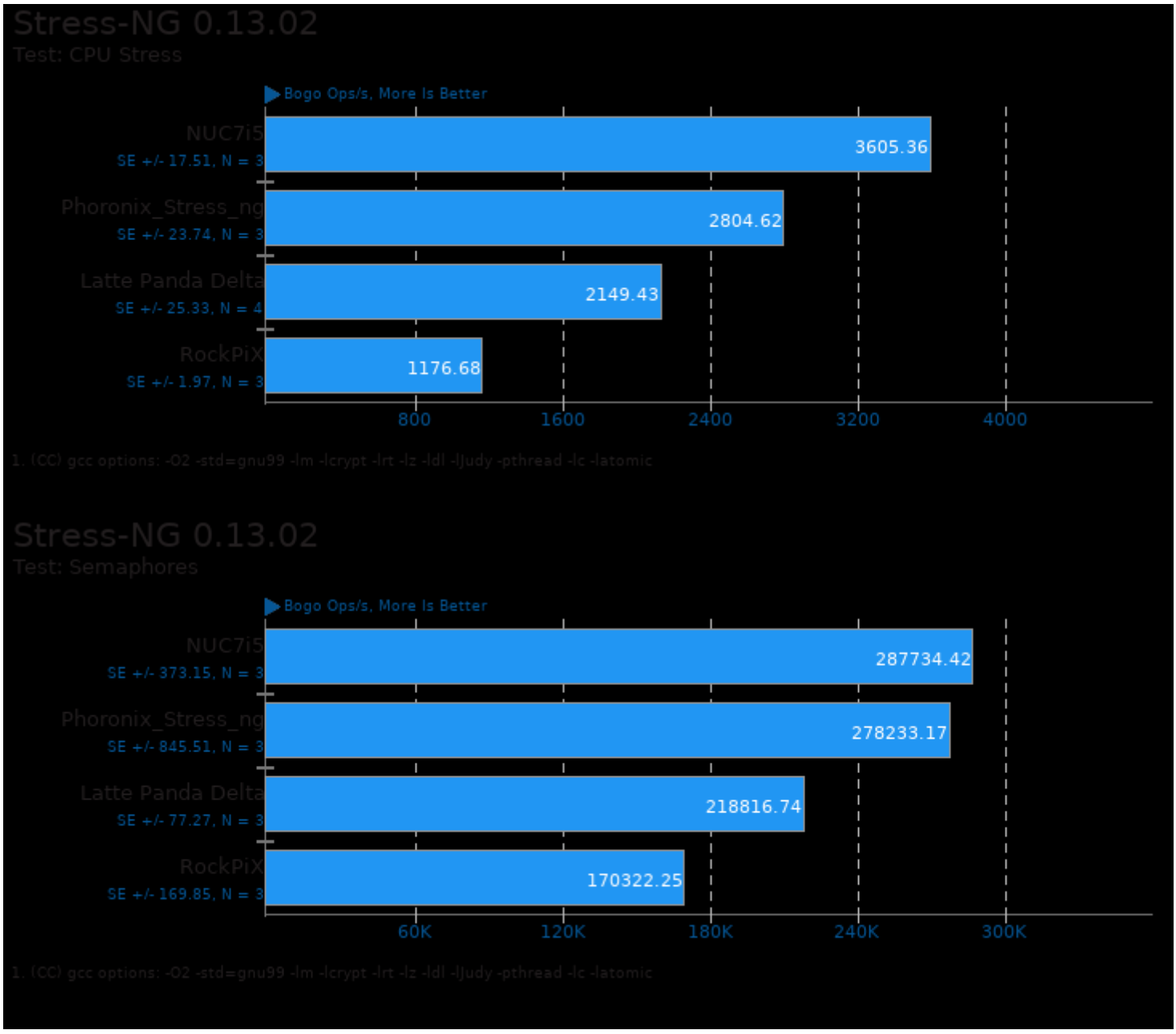


Phoronix_Stress_ng

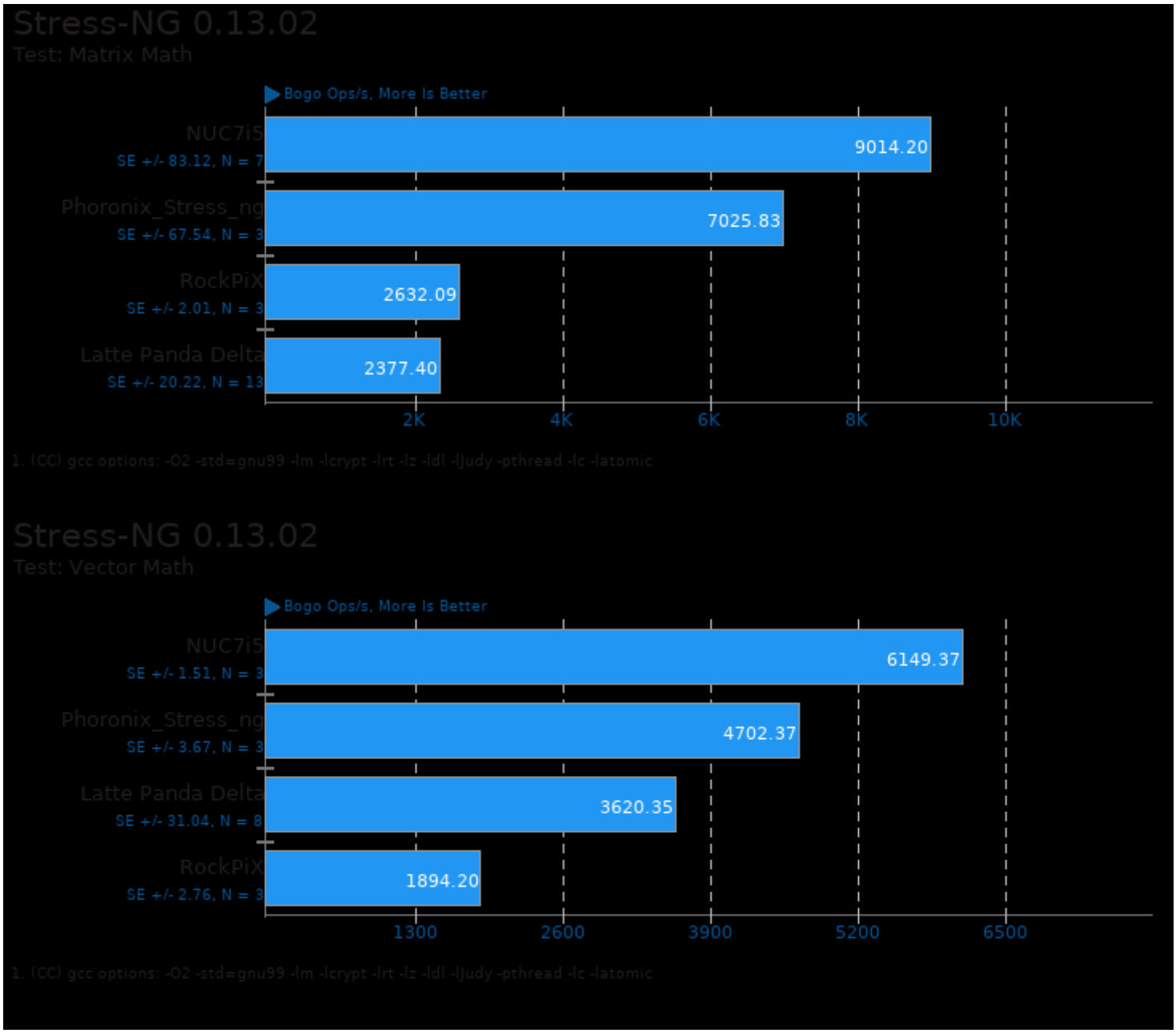



Stress-NG 0.13.02
Test: SENDFILE
Bogo Ops/s, More Is Better
NUC7i5
SE +/- 3.80, N = 3
6923.67
Phoronix_Stress_ng
SE +/- 1.66, N = 3
5362.73
Latte Panda Delta
SE +/- 30.82, N = 13
3478.15
RockPiX
SE +/- 2.15, N = 3
1929.08
1500
3000
4500
6000
7500
1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -ljudy -pthread -lc -latomic
Stress-NG 0.13.02
Test: CPU Cache
Bogo Ops/s, More Is Better
NUC7i5
SE +/- 1.52, N = 3
203.74
RockPiX
SE +/- 1.22, N = 3
163.80
Phoronix_Stress_ng
SE +/- 0.32, N = 3
130.70
Latte Panda Delta
SE +/- 2.56, N = 15
72.41
40
80
120
160
200
1. (CC) gcc options: -O2 -std=gnu99 -lm -lcrypt -lrt -lz -ldl -ljudy -pthread -lc -latomic

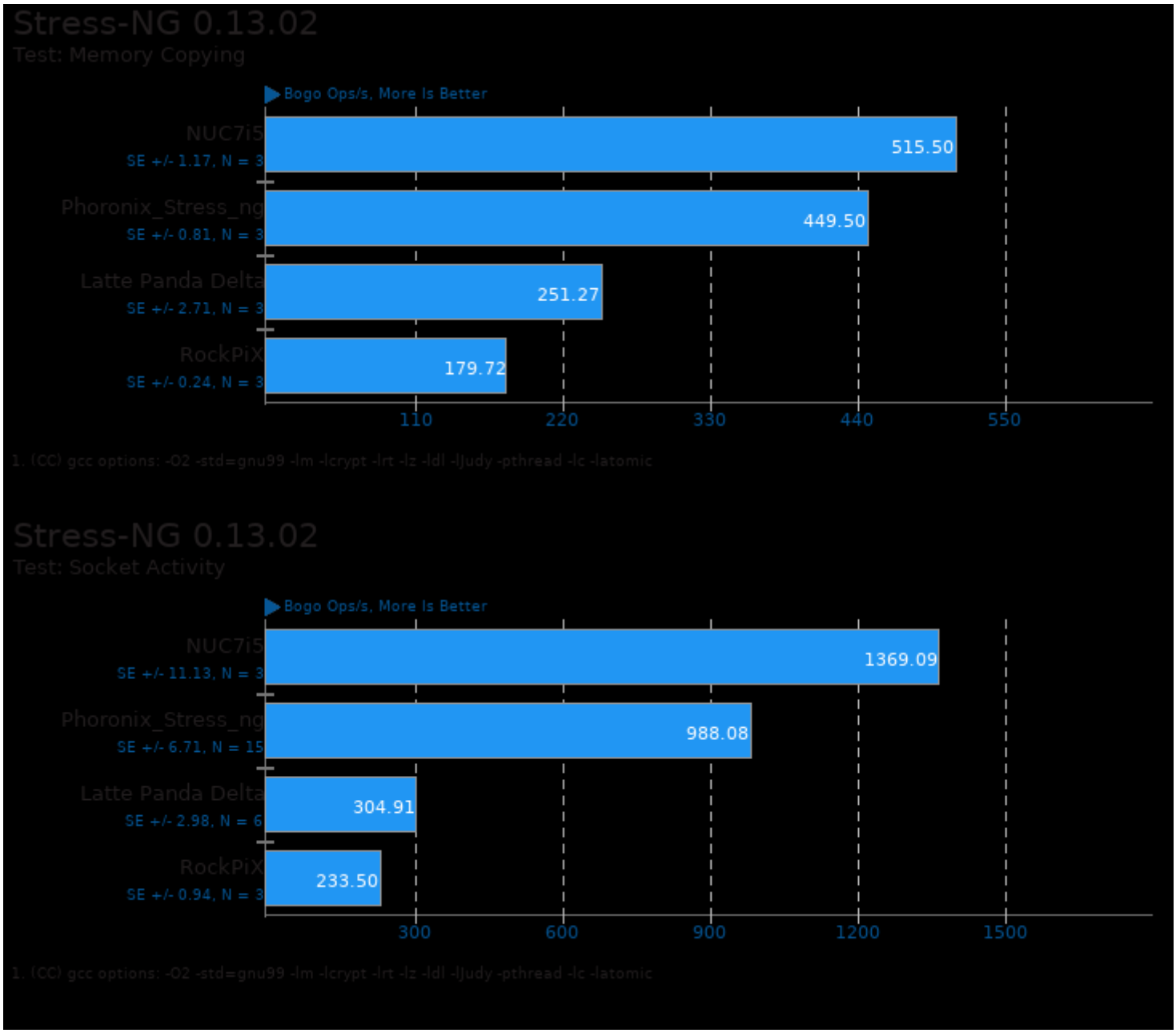
Phoronix_Stress_ng



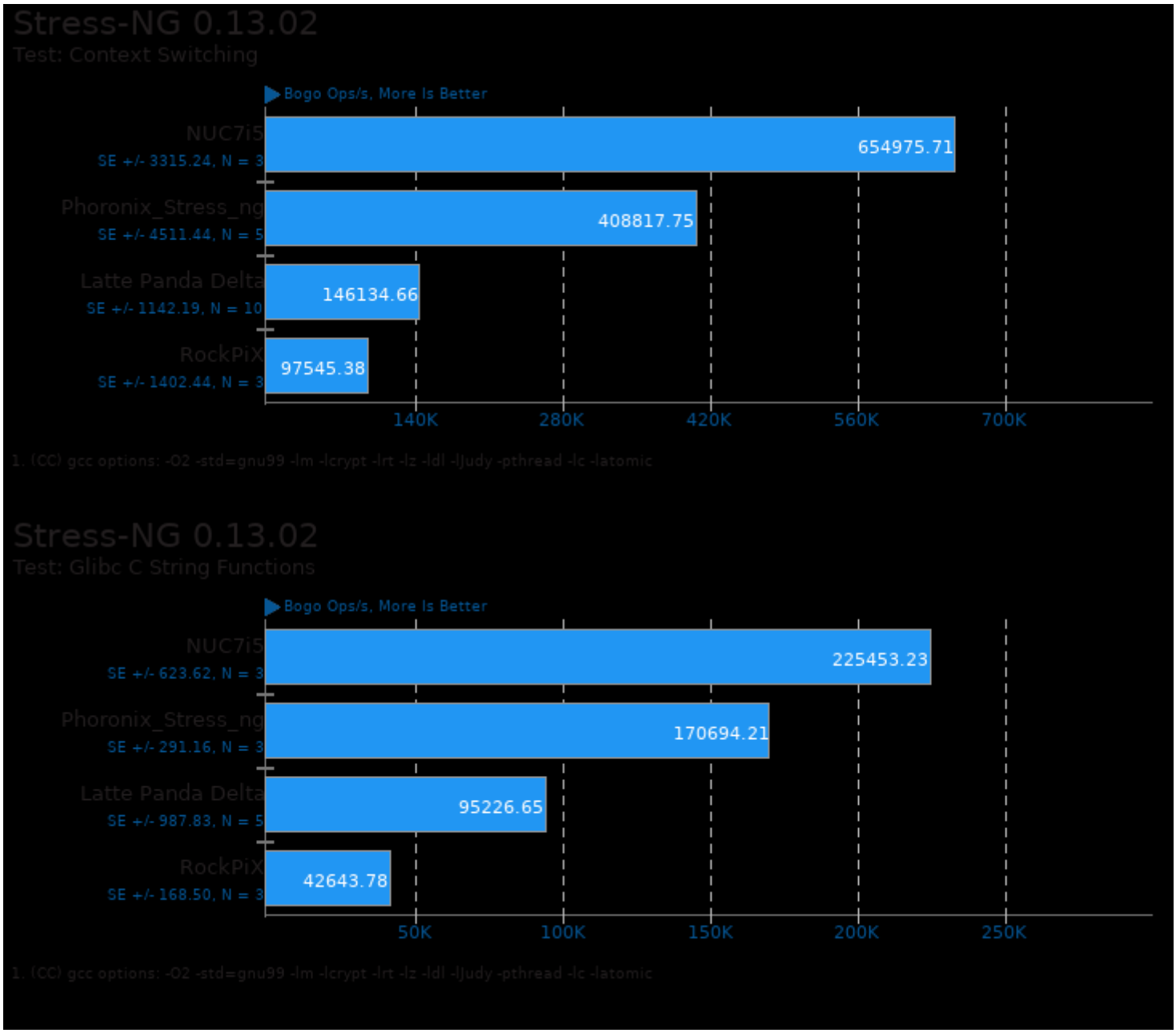
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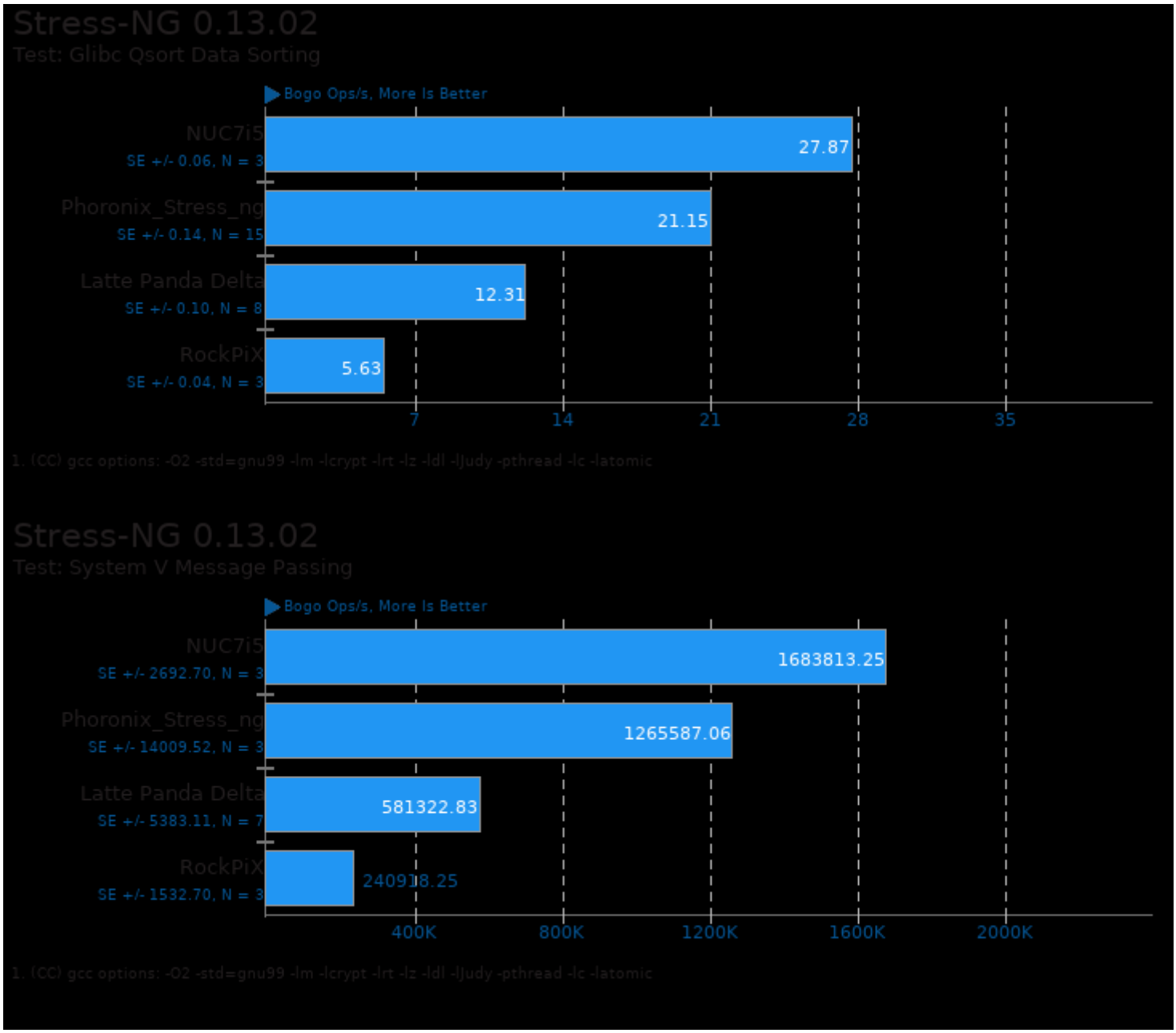
Phoronix_Stress_ng



Phoronix_Stress_ng



Phoronix_Stress_ng



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