



mlc epyc

AMD EPYC 7F32 8-Core testing with a Supermicro H12SSL-i v1.01 (2.0 BIOS) and ASPEED on Ubuntu 21.04 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 36% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.405x the speed of the slowest (2b). 3 was 1x the speed of 2, 1 was 1x the speed of 3, 4 was 1x the speed of 1, 2e was 0.712x the speed of 4, 2c was 1x the speed of 2e, 2d was 1x the speed of 2c, 2a was 1x the speed of 2d, 2b was 1x the speed of 2a.

Test Systems:

1

2

3

4

Processor: AMD EPYC 72F3 8-Core @ 3.70GHz (8 Cores / 16 Threads), Motherboard: Supermicro H12SSL-i v1.01 (2.0 BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 16 GB DDR4-3200MT/s 18ASF2G72PDZ-3G2E1, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Network: 2 x Broadcom NetXtreme BCM5720 2-port PCIe

OS: Ubuntu 21.04, Kernel: 5.11.0-16-generic (x86_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server 1.20.7, Vulkan: 1.0.2, Compiler: GCC 11.0.1 20210413, File-System: ext4, Screen Resolution: 1024x768

Kernel Notes: Transparent Huge Pages: madvise

Processor Notes: Scaling Governor: acpi-cpufreq performance (Boost: Enabled) - CPU Microcode: 0xa001119

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 Full AMD retpoline IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

2a

2b

2c

2d

2e

Processor: AMD EPYC 7F32 8-Core @ 3.70GHz (8 Cores / 16 Threads), Motherboard: Supermicro H12SSL-i v1.01 (2.0 BIOS), Chipset: AMD Starship/Matisse, Memory: 8 x 16 GB DDR4-3200MT/s 18ASF2G72PDZ-3G2E1, Disk: 3841GB Micron_9300_MTFDHAL3T8TDP, Graphics: ASPEED, Network: 2 x Broadcom NetXtreme BCM5720 2-port PCIe

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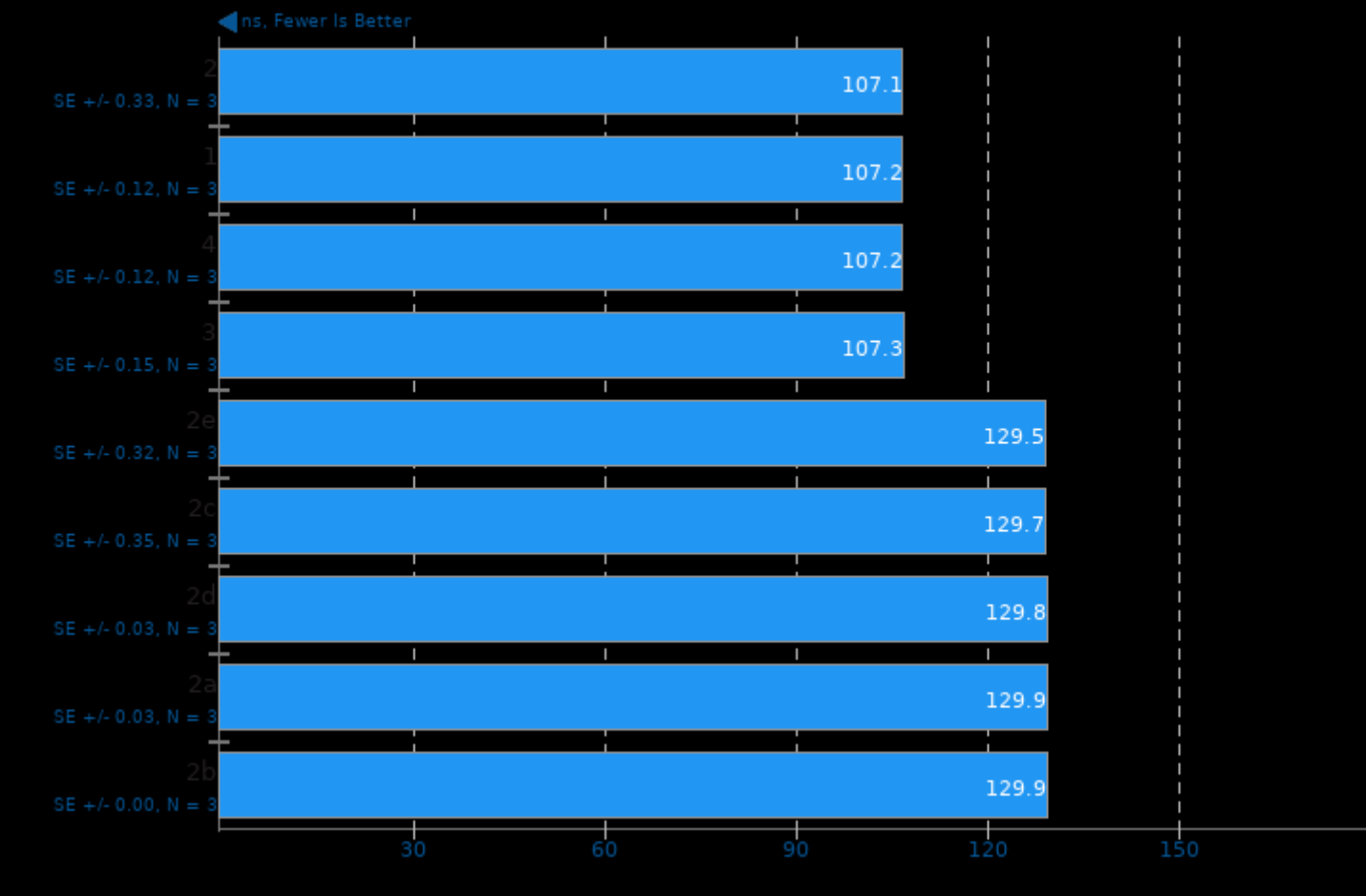
	1	2	3	4	2a	2b	2c	2d	2e
Intel Memory	107.2	107.1	107.3	107.2	129.9	129.9	129.7	129.8	129.5
Latency Checker - Idle Latency (ns)									
Normalized	99.91%	100%	99.81%	99.91%	82.45%	82.45%	82.58%	82.51%	82.7%
Standard Deviation	0.2%	0.5%	0.2%	0.2%	0%	0%	0.5%	0%	0.4%

Intel Memory	169234	168856	169213	169340	111601	111654	111600	111754	111609
Latency Checker -									
Max Bandwidth - All									
Reads (MB/s)									
Normalized	99.94%	99.71%	99.92%	100%	65.9%	65.93%	65.9%	65.99%	65.91%
Standard Deviation	0.1%	0.4%	0.1%	0%	0%	0.1%	0%	0.1%	0%
Intel Memory	179616	179640	179739	179784	127324	127306	127299	127334	127322
Latency Checker -									
Max Bandwidth - 3:1									
Reads-Writes (MB/s)									
Normalized	99.91%	99.92%	99.97%	100%	70.82%	70.81%	70.81%	70.83%	70.82%
Standard Deviation	0.1%	0.1%	0%	0%	0%	0%	0%	0.1%	0.1%
Intel Memory	172057	172118	172163	172098	126643	126653	126717	126709	126768
Latency Checker -									
Max Bandwidth - 2:1									
Reads-Writes (MB/s)									
Normalized	99.94%	99.97%	100%	99.96%	73.56%	73.57%	73.6%	73.6%	73.63%
Standard Deviation	0.2%	0.1%	0.1%	0.1%	0%	0.1%	0%	0%	0%
Intel Memory	194637	194661	194649	194644	132737	132748	132772	132756	132750
Latency Checker -									
Max Bandwidth - 1:1									
Reads-Writes (MB/s)									
Normalized	99.99%	100%	99.99%	99.99%	68.19%	68.19%	68.21%	68.2%	68.2%
Standard Deviation	0%	0%	0%	0%	0%	0%	0%	0%	0%
Intel Memory	185407	185491	185597	185333	133674	133641	133679	133620	133648
Latency Checker -									
Max Bandwidth -									
Stream-Triad Like									
(MB/s)									
Normalized	99.9%	99.94%	100%	99.86%	72.02%	72.01%	72.03%	71.99%	72.01%
Standard Deviation	0.2%	0.1%	0.1%	0.2%	0.1%	0%	0%	0.1%	0.1%
Intel Memory	169087	169451	169177	169069	111595	111612	111660	111583	111620
Latency Checker -									
P.I.B - All Reads									
Normalized	99.79%	100%	99.84%	99.77%	65.86%	65.87%	65.9%	65.85%	65.87%
Standard Deviation	0.4%	0%	0.1%	0.1%	0%	0%	0%	0%	0%
Intel Memory	179772	179712	179631	179650	127304	127289	127289	127250	127253
Latency Checker -									
P.I.B - 3:1									
Normalized	100%	99.97%	99.92%	99.93%	70.81%	70.81%	70.81%	70.78%	70.79%
Standard Deviation	0%	0%	0%	0%	0%	0%	0%	0%	0.1%
Intel Memory	172255	172151	171997	172103	126727	126688	126683	126672	126625
Latency Checker -									
P.I.B - 2:1									
Normalized	100%	99.94%	99.85%	99.91%	73.57%	73.55%	73.54%	73.54%	73.51%
Standard Deviation	0%	0.1%	0.1%	0.2%	0%	0.1%	0%	0%	0%
Intel Memory	192743	192698	192698	192740	132805	132764	132759	132773	132686
Latency Checker -									
P.I.B - 1:1									
Normalized	100%	99.98%	99.98%	100%	68.9%	68.88%	68.88%	68.89%	68.84%
Standard Deviation	0%	0%	0%	0%	0%	0%	0%	0%	0.1%

Intel Memory	185384	185632	185531	185237	133653	133684	133645	133629	133630
Latency Checker -									
P.I.B - Stream-Triad									
Like (MB/s)									
Normalized	99.87%	100%	99.95%	99.79%	72%	72.02%	71.99%	71.99%	71.99%
Standard Deviation	0.3%	0.1%	0%	0.2%	0%	0.1%	0%	0%	0.1%

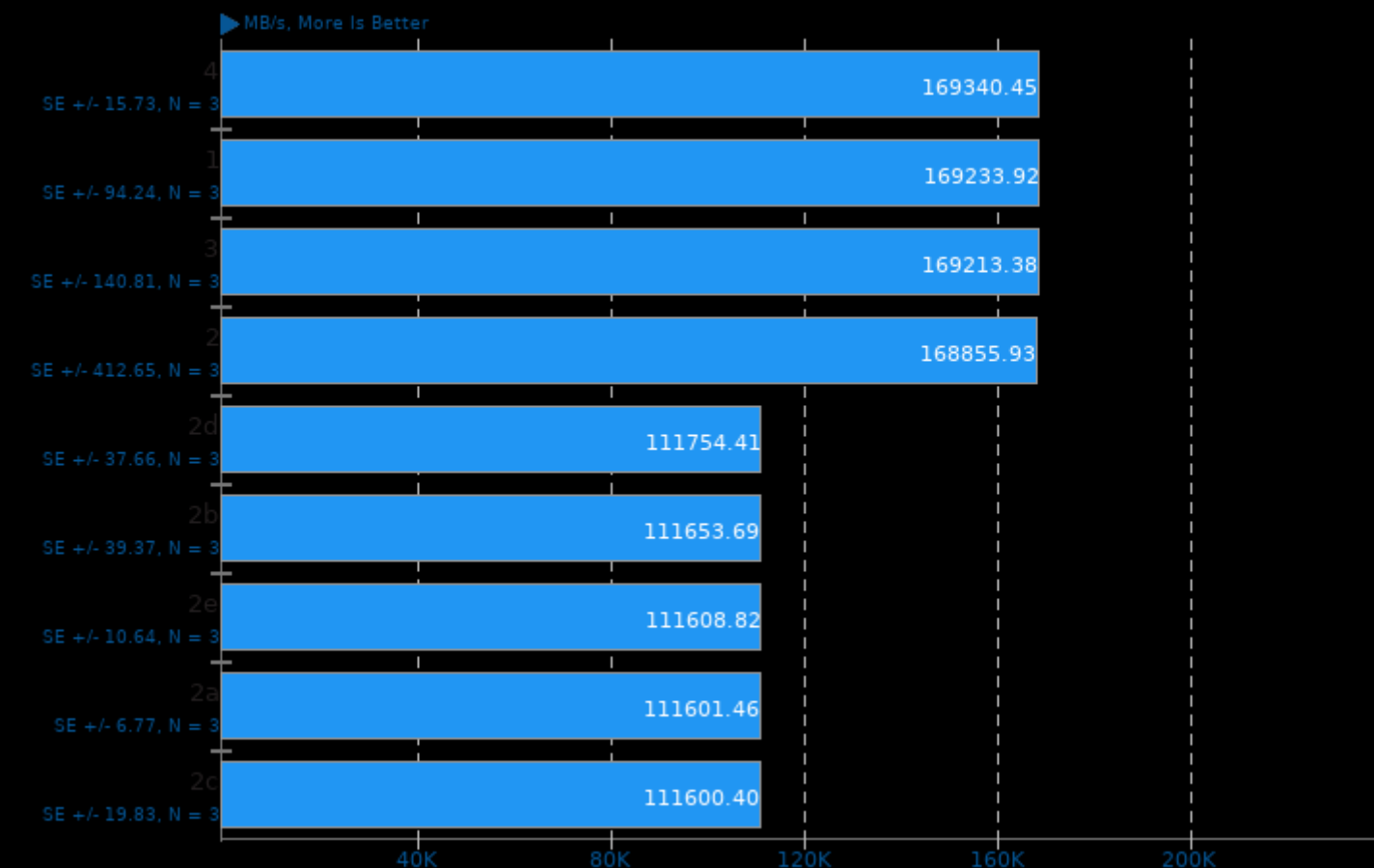
Intel Memory Latency Checker

Test: Idle Latency



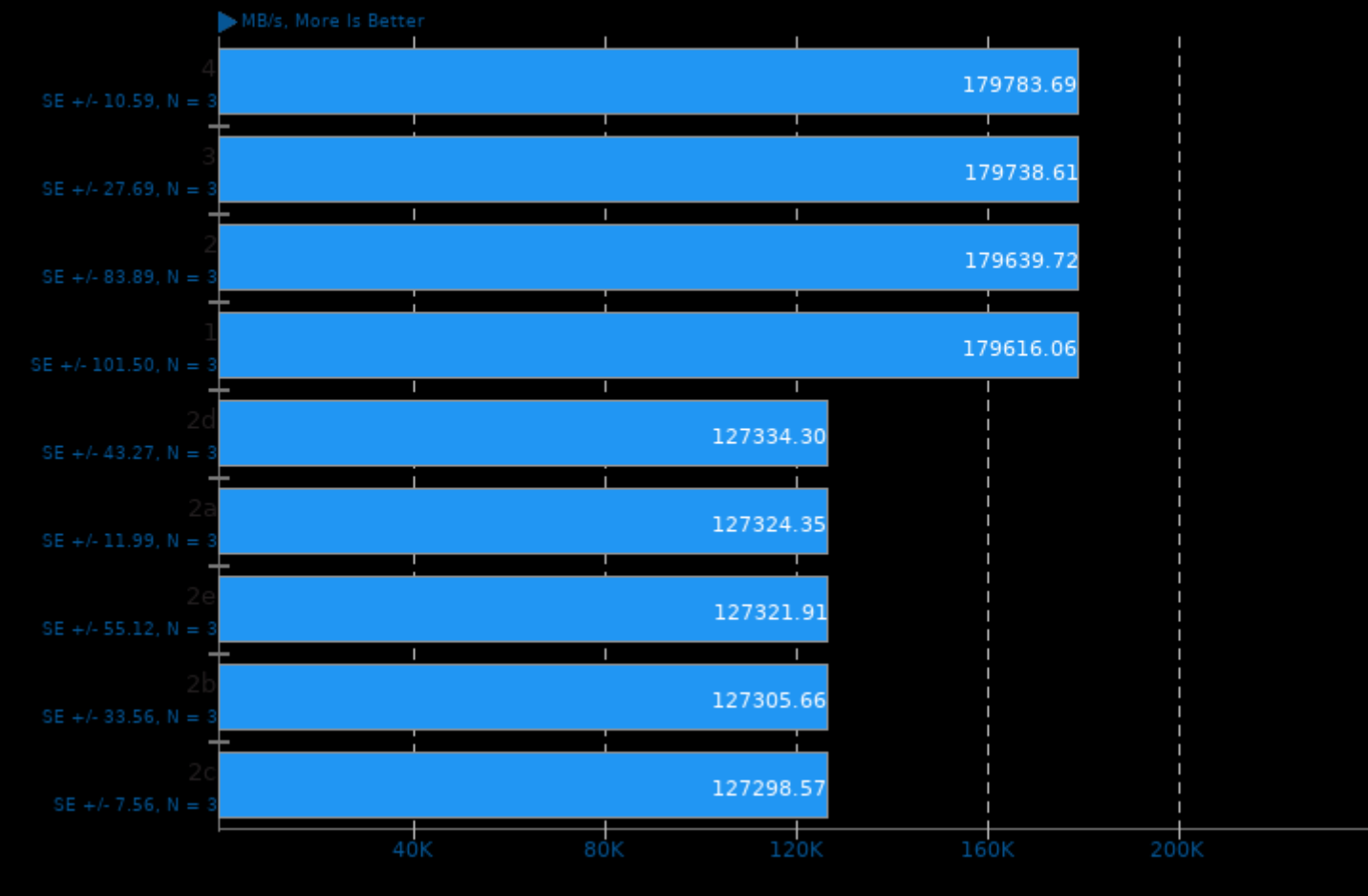
Intel Memory Latency Checker

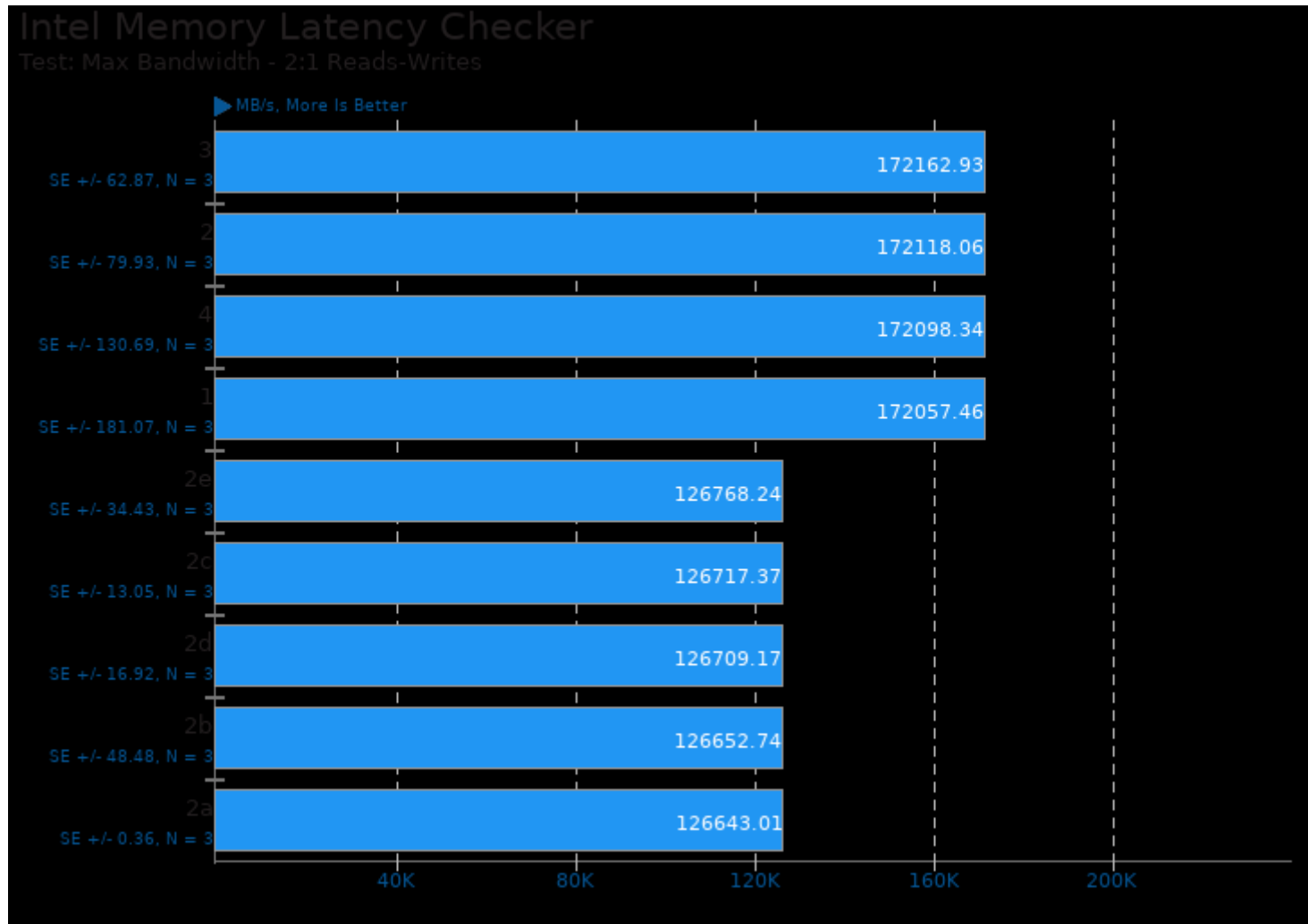
Test: Max Bandwidth - All Reads



Intel Memory Latency Checker

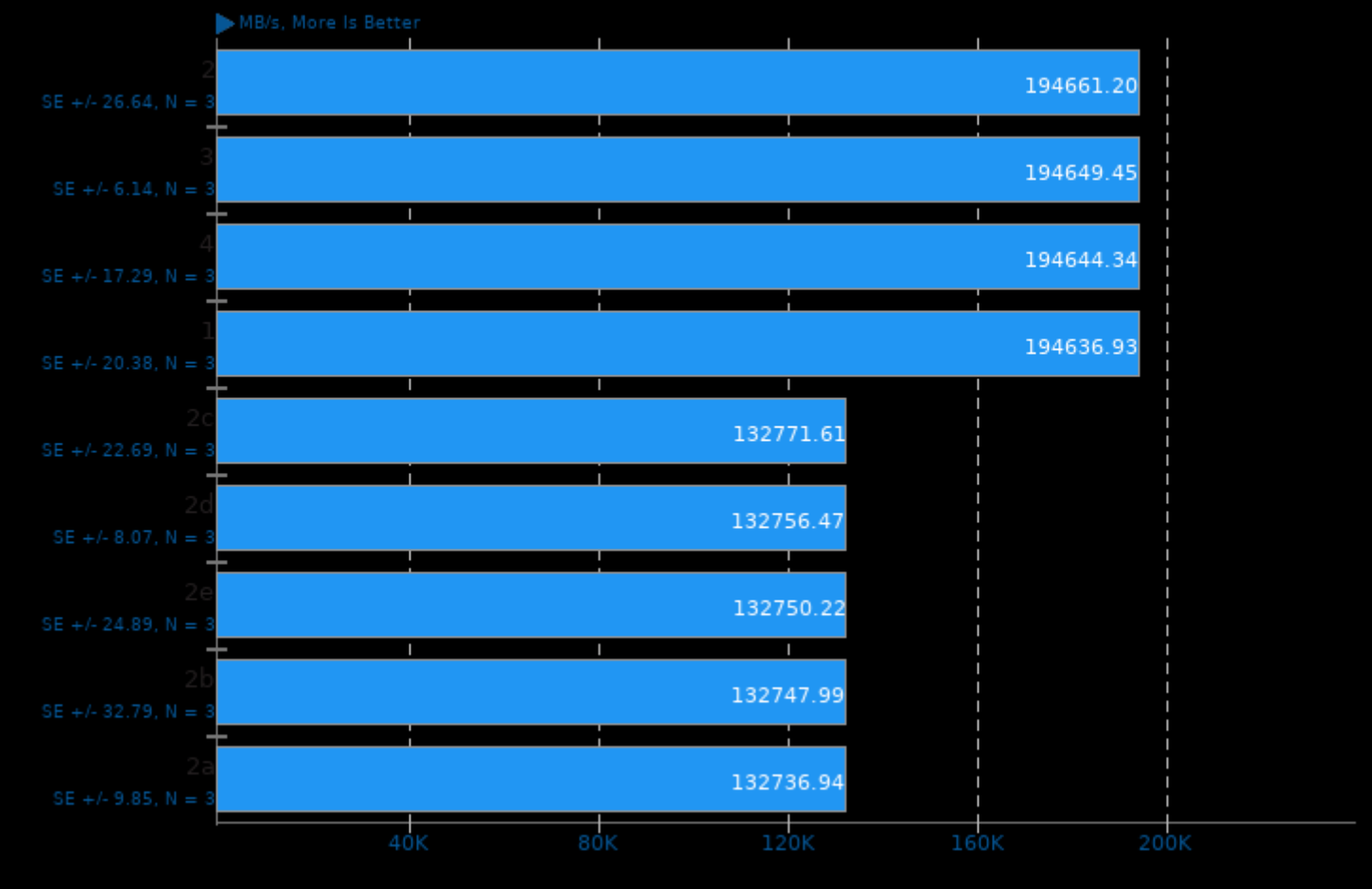
Test: Max Bandwidth - 3:1 Reads-Writes





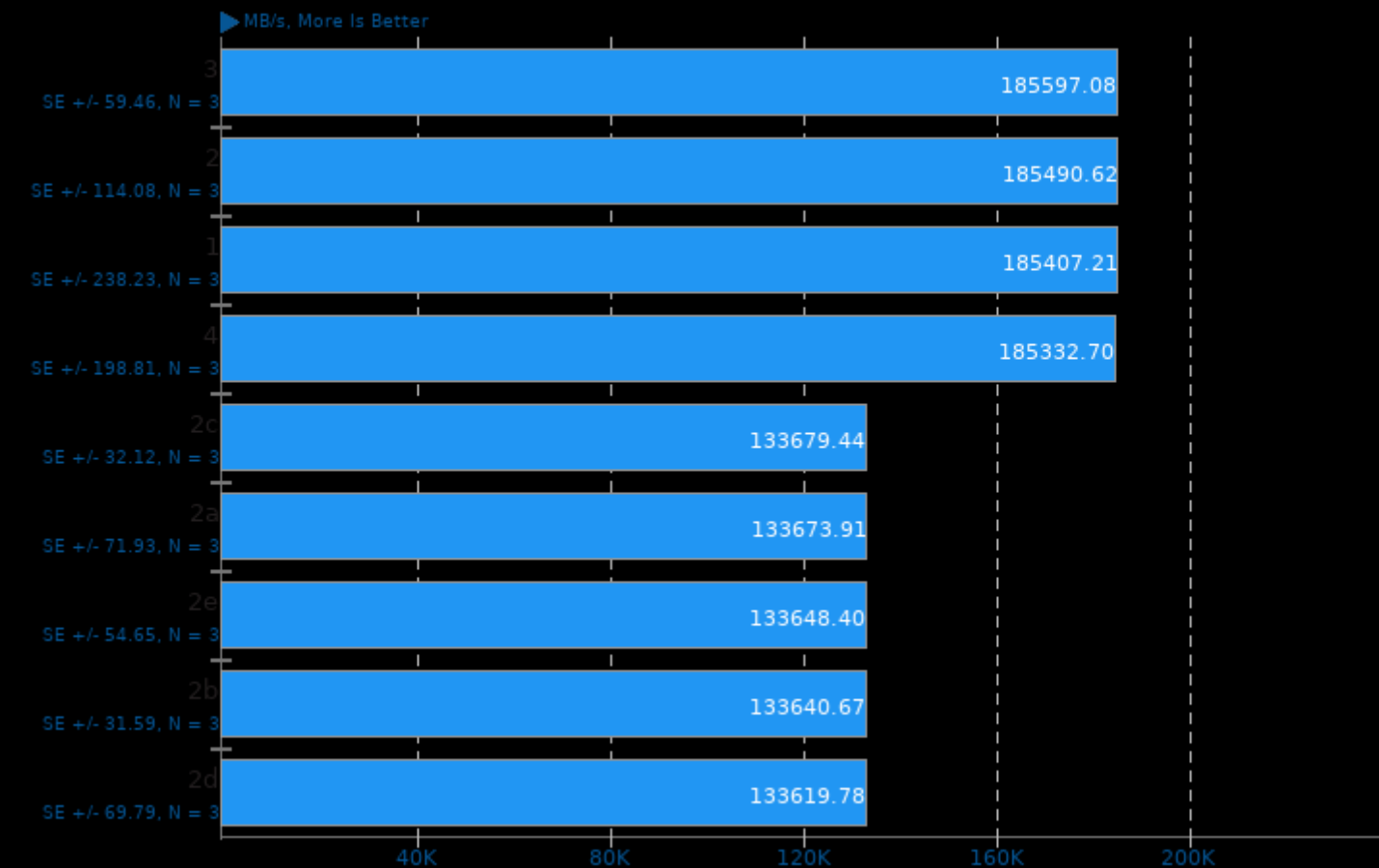
Intel Memory Latency Checker

Test: Max Bandwidth - 1:1 Reads-Writes



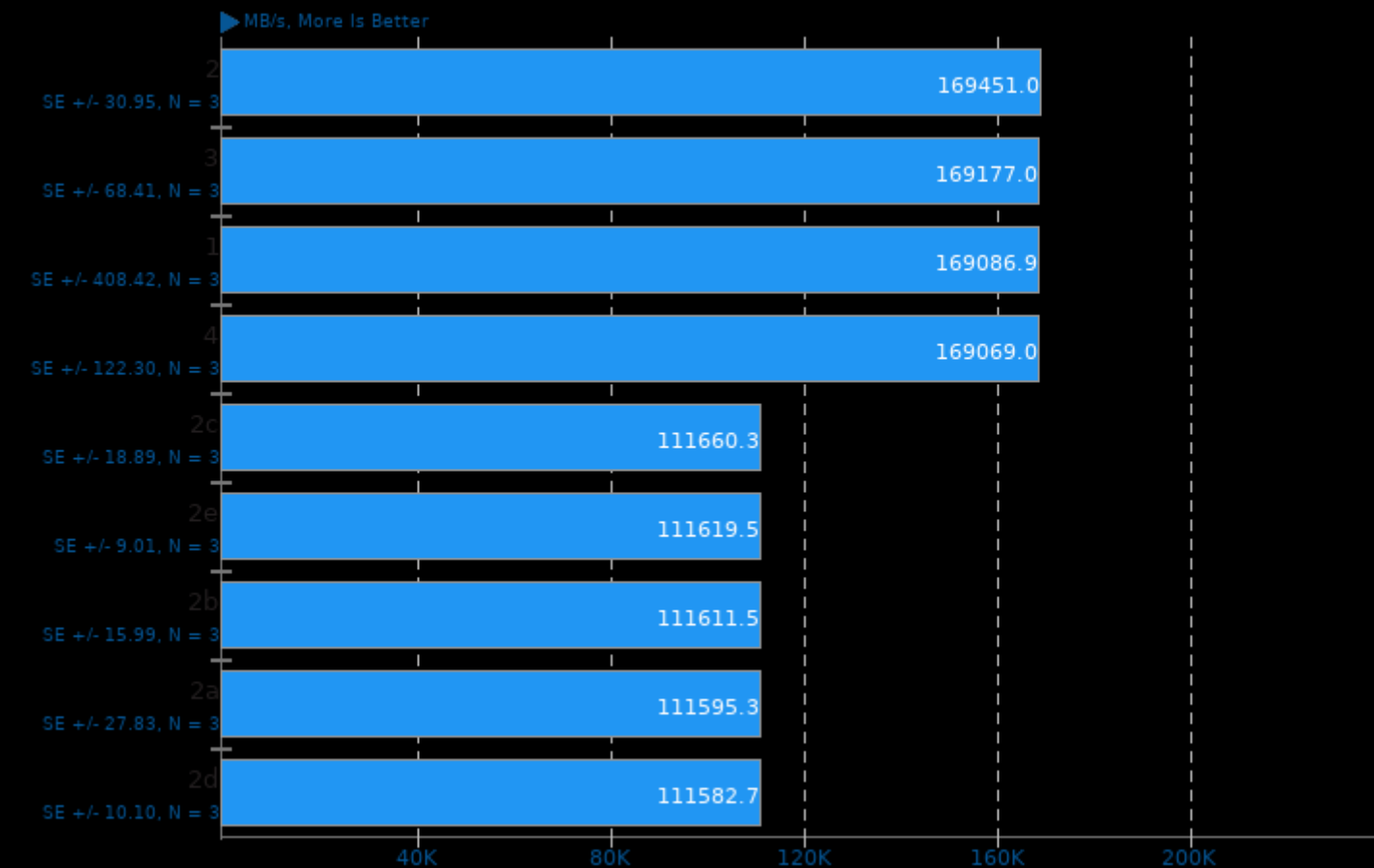
Intel Memory Latency Checker

Test: Max Bandwidth - Stream-Triad Like



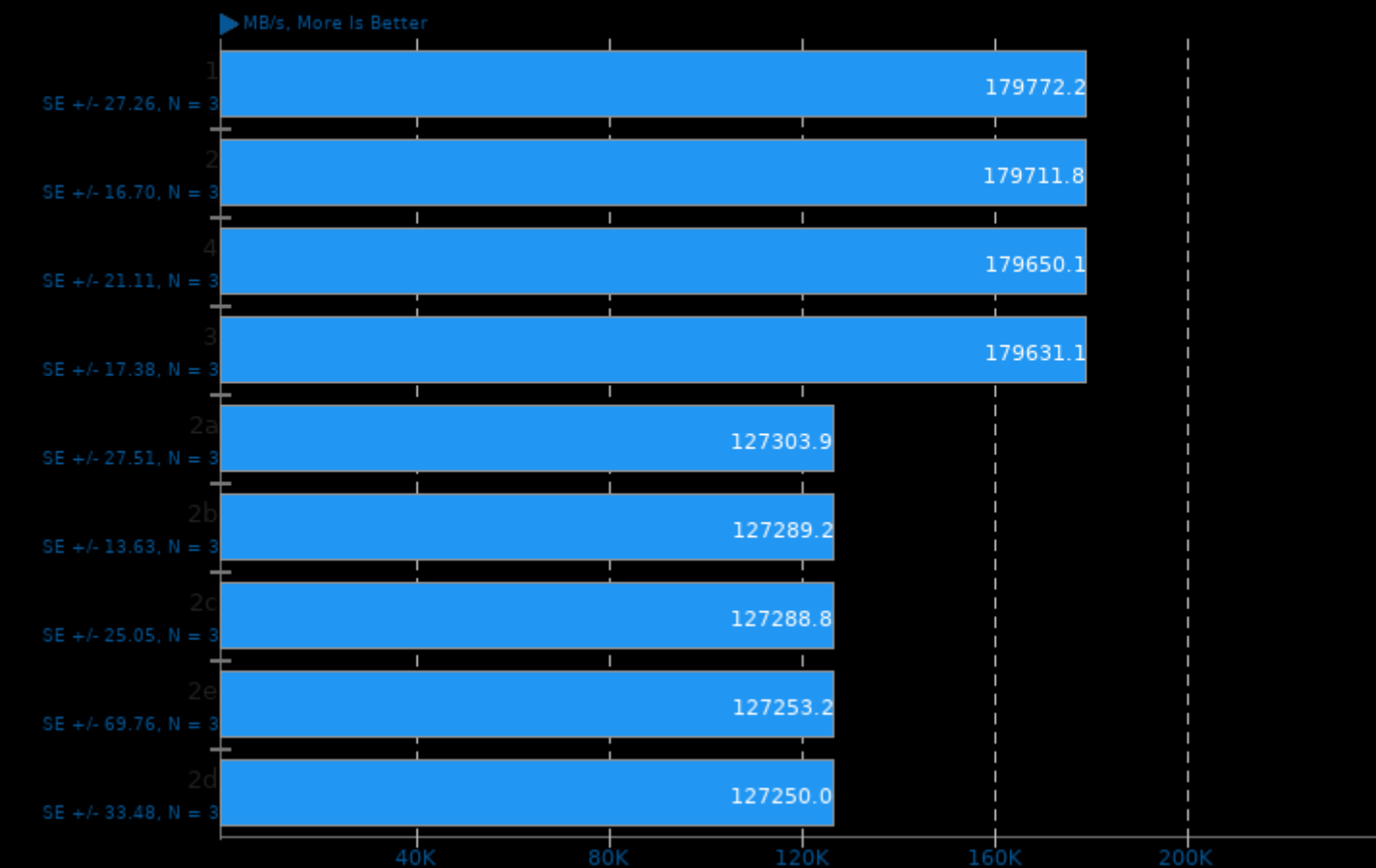
Intel Memory Latency Checker

Test: Peak Injection Bandwidth - All Reads



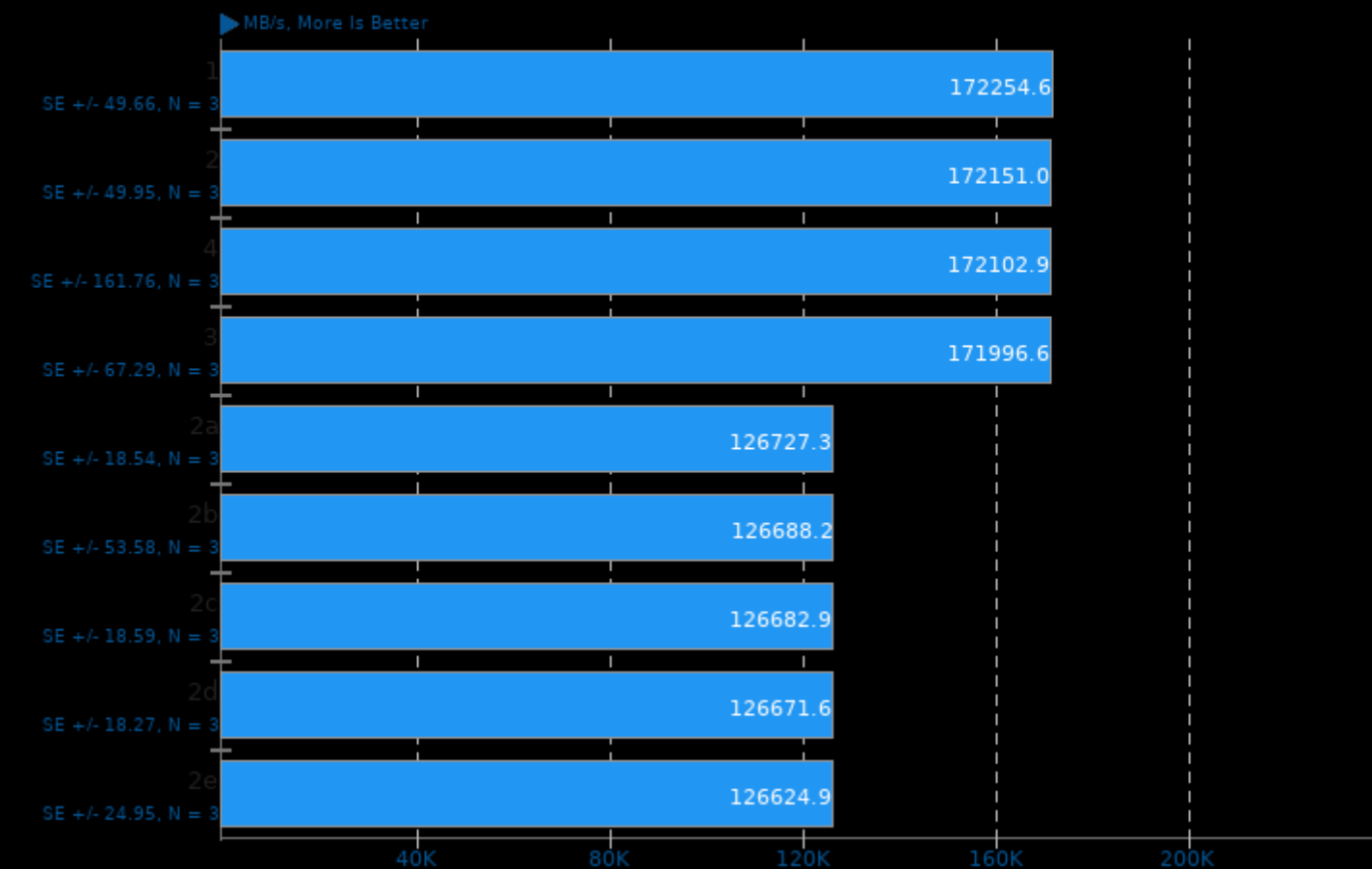
Intel Memory Latency Checker

Test: Peak Injection Bandwidth - 3:1 Reads-Writes



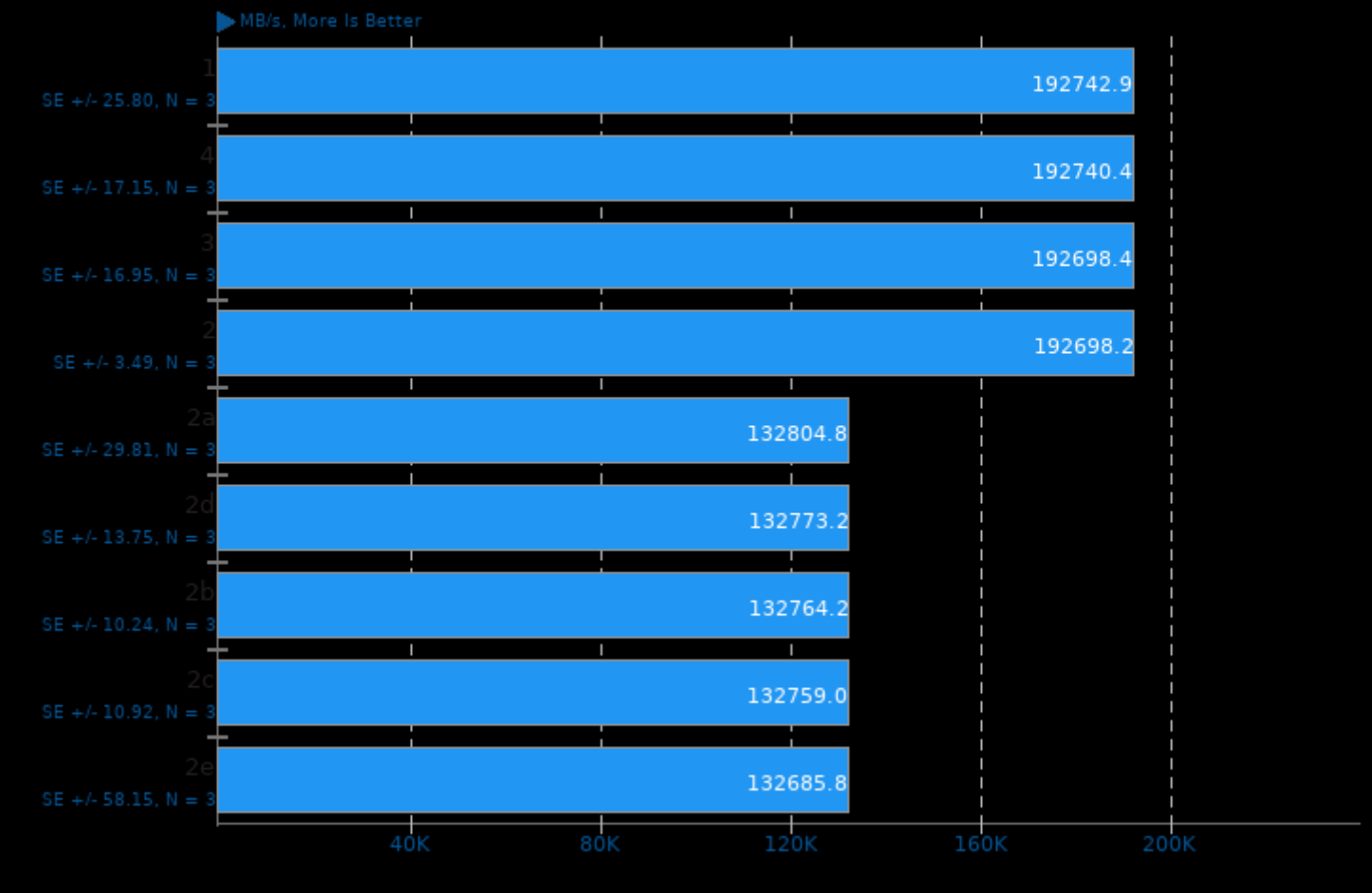
Intel Memory Latency Checker

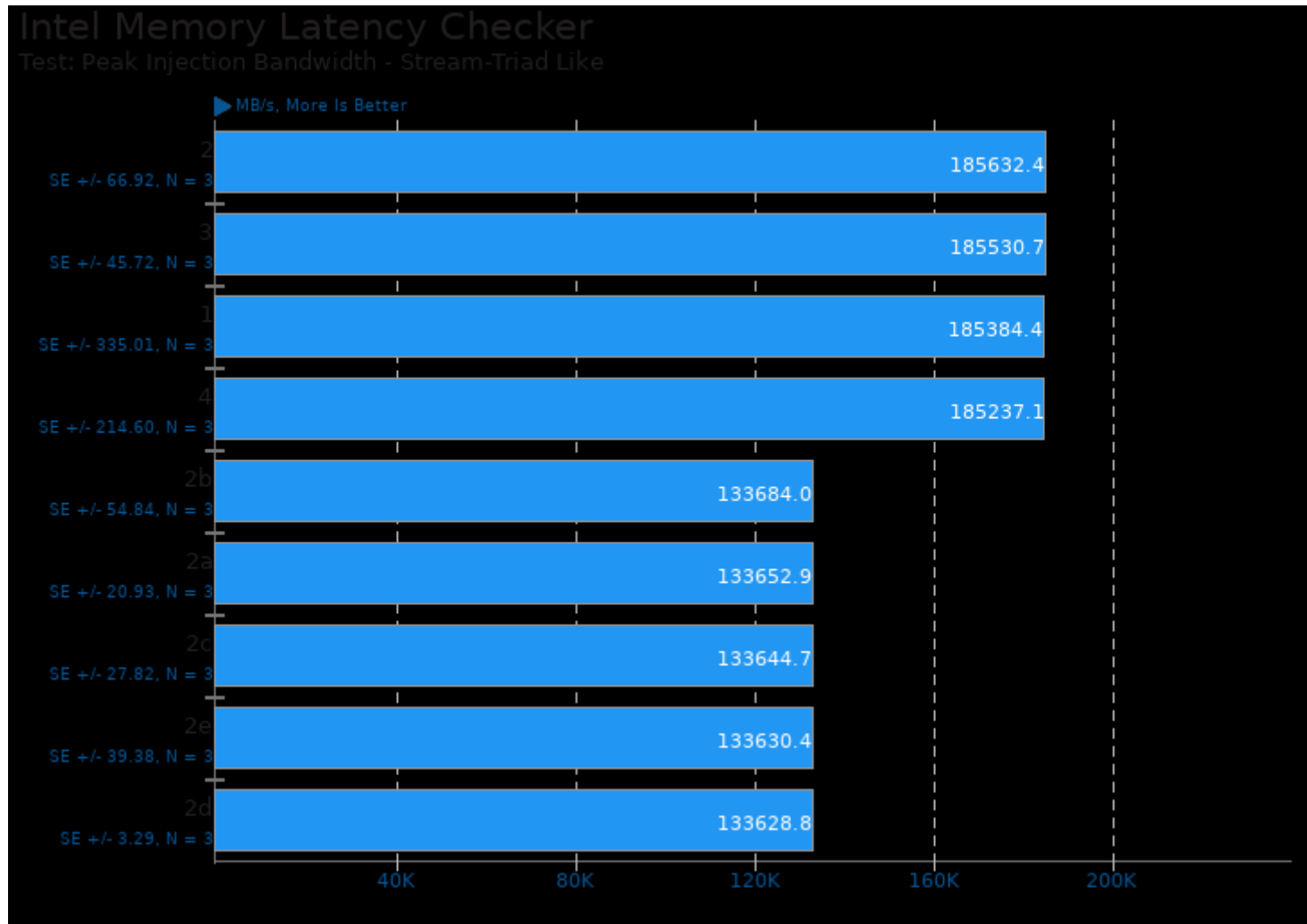
Test: Peak Injection Bandwidth - 2:1 Reads-Writes



Intel Memory Latency Checker

Test: Peak Injection Bandwidth - 1:1 Reads-Writes





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