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0610-vs

optane

Test Systems:

under load 90

Processor: 2 x Intel Xeon Gold 5220R (48 Cores / 96 Threads), Motherboard: HPE ProLiant DL360 Gen10 (U32 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 16 x 32 GB DDR4-2666MT/s HPE, Disk: 3201GB MO003200KWVUV, Graphics: Matrox MGA G200eH3, Network: 2 x Intel 10G X550T

OS: Ubuntu 18.04, Kernel: 4.15.0-140-generic (x86_64), Compiler: GCC 7.5.0, File-System: ext4, Screen Resolution: 1024x768

Kernel Notes: nvme_core.multipath=0 - Transparent Huge Pages: madvise
Processor Notes: CPU Microcode: 0x5003003
Security Notes: itlb_multihit: KVM: Mitigation of Split huge pages + 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: Mitigation of TSX disabled

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Processor: 2 x Intel Xeon Gold 5220R (48 Cores / 96 Threads), Motherboard: HPE ProLiant DL360 Gen10 (U32 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 129408 MB + 32 GB + 32 GB + 32 GB + 32 GB + 129408 MB + 129408 MB + 32 GB + 32 GB + 32 GB + 32 GB + 129408 MB DDR4-2666MT/s, Disk: 3201GB MO003200KWVUV, Graphics: Matrox MGA G200eH3, Network: 2 x Intel 10G X550T

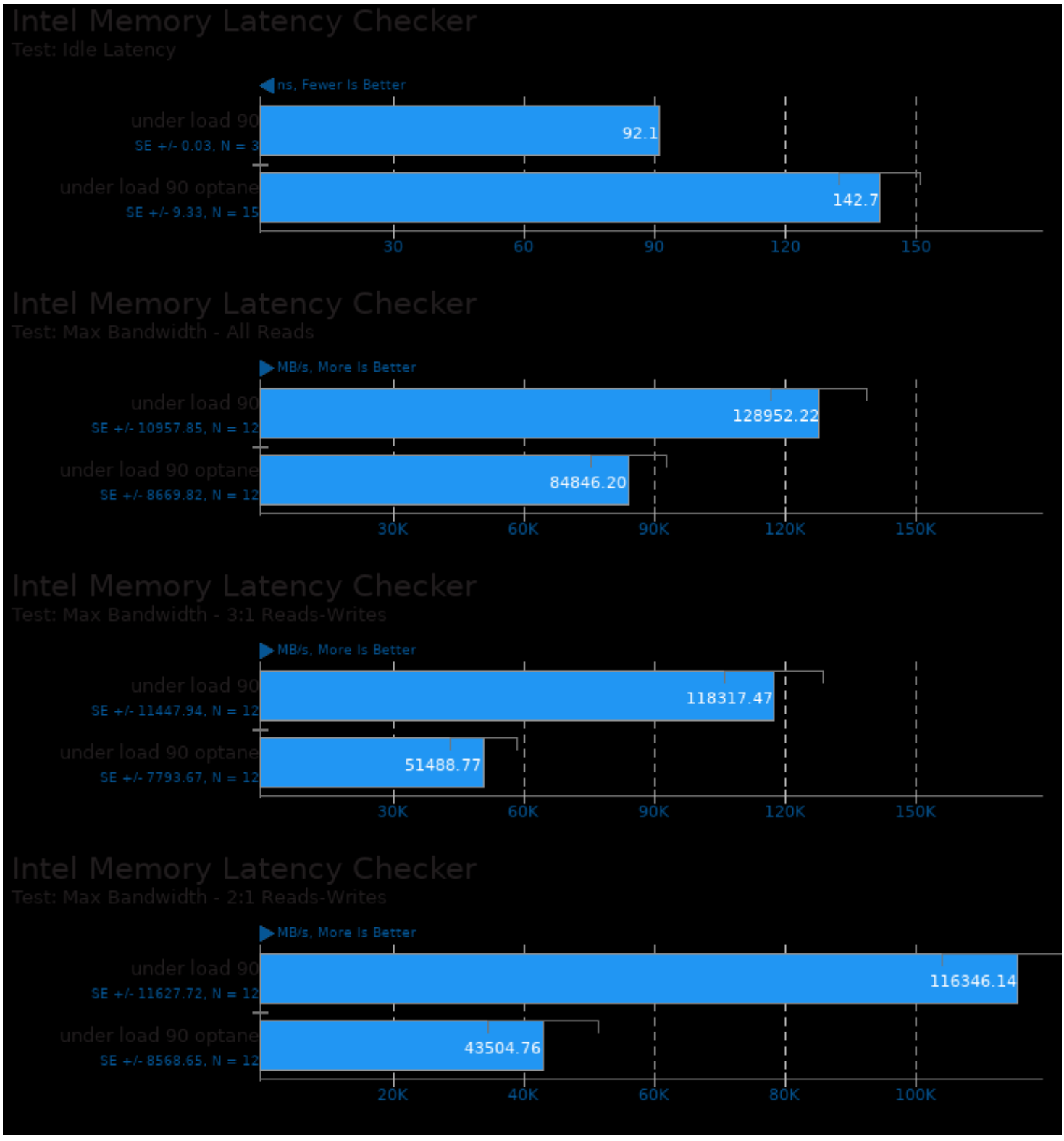
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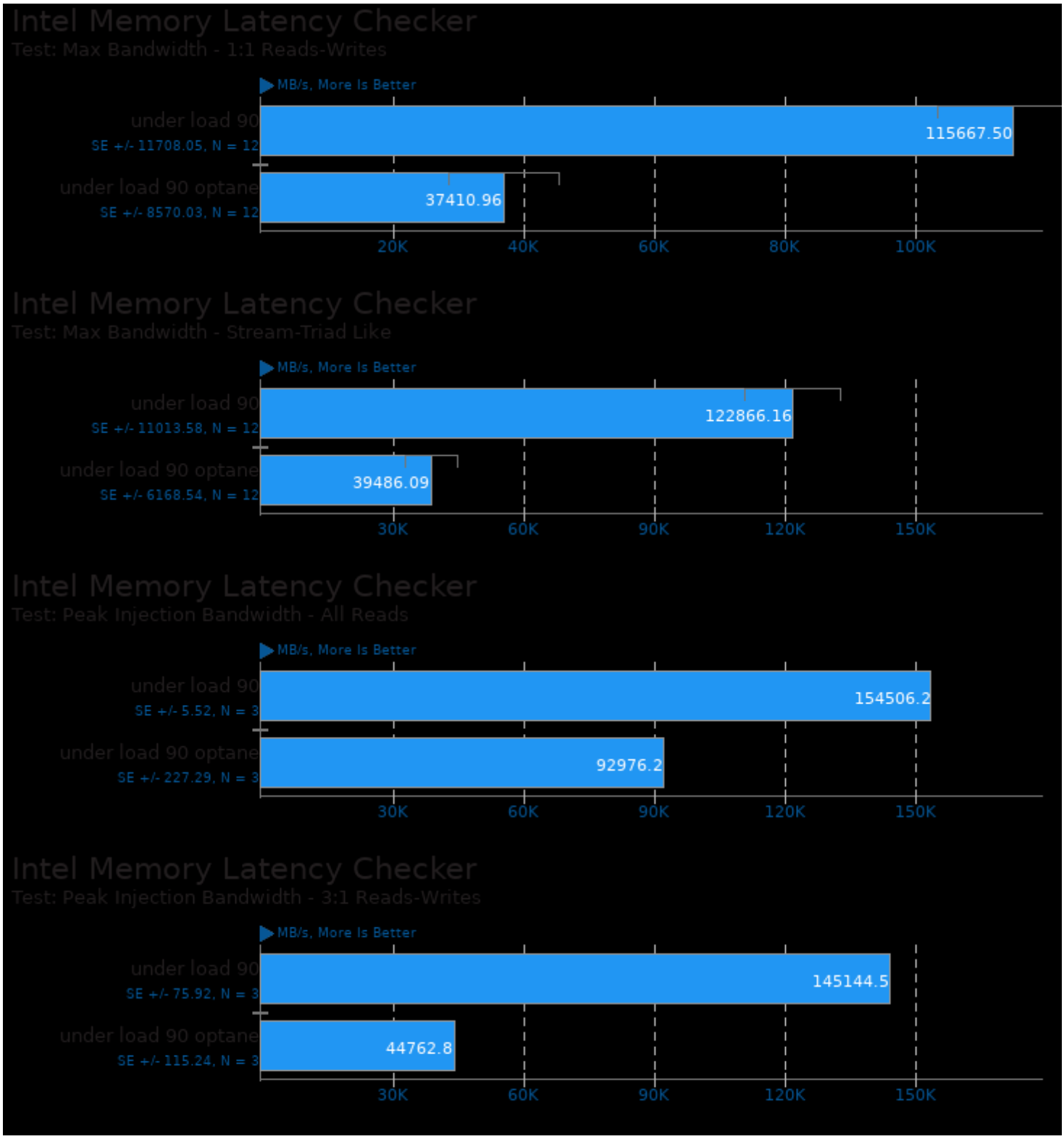
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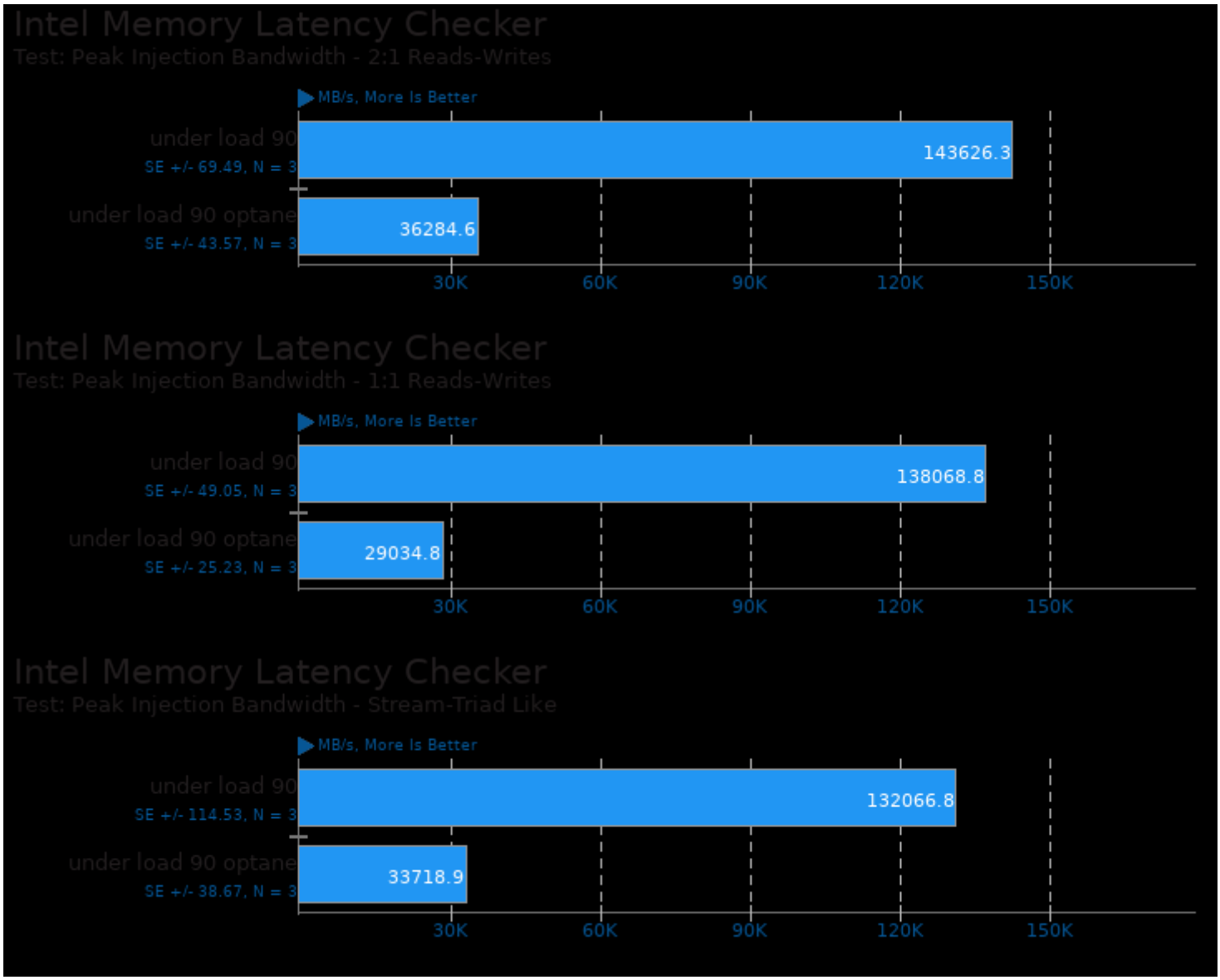
	under load 90	under load 90 optane
Intel Memory Latency Checker - Idle Latency (ns)	**92.1**	**142.7**
Normalized	100%	64.54%
Standard Deviation	0.1%	25.3%
Intel Memory Latency Checker - Max Bandwidth - All Reads (MB/s)	**128952**	**84846**
Normalized	100%	65.8%
Standard Deviation	29.4%	35.4%
Intel Memory Latency Checker - Max Bandwidth - 3:1 Reads-Writes (MB/s)	**118317**	**51489**
Normalized	100%	43.52%
Standard Deviation	33.5%	52.4%
Intel Memory Latency Checker - Max Bandwidth - 2:1 Reads-Writes (MB/s)	**116346**	**43505**
Normalized	100%	37.39%
Standard Deviation	34.6%	68.2%
Intel Memory Latency Checker - Max Bandwidth - 1:1 Reads-Writes (MB/s)	**115668**	**37411**
Normalized	100%	32.34%
Standard Deviation	35.1%	79.4%
Intel Memory Latency Checker - Max Bandwidth - Stream-Triad Like (MB/s)	**122866**	**39486**
Normalized	100%	32.14%
Standard Deviation	31.1%	54.1%
Intel Memory Latency Checker - P.I.B - All Reads	**154506**	**92976**
Normalized	100%	60.18%
Standard Deviation	0%	0.4%
Intel Memory Latency Checker - P.I.B - 3:1 Reads-Writes (MB/s)	**145145**	**44763**
Normalized	100%	30.84%
Standard Deviation	0.1%	0.4%
Intel Memory Latency Checker - P.I.B - 2:1 Reads-Writes (MB/s)	**143626**	**36285**
Normalized	100%	25.26%
Standard Deviation	0.1%	0.2%

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Intel Memory Latency Checker - P.I.B - 1:1 Reads-Writes (MB/s)	**138069**	**29035**
Normalized	100%	21.03%
Standard Deviation	0.1%	0.2%
Intel Memory Latency Checker - P.I.B - Stream-Triad Like (MB/s)	**132067**	**33719**
Normalized	100%	25.53%
Standard Deviation	0.2%	0.2%


Intel Memory Latency Checker
Test: Idle Latency
ns, Fewer Is Better
under load 90
SE +/- 0.03, N = 3
92.1
under load 90 optane
SE +/- 9.33, N = 15
142.7
30
60
90
120
150
Intel Memory Latency Checker
Test: Max Bandwidth - All Reads
MB/s, More Is Better
under load 90
SE +/- 10957.85, N = 12
128952.22
under load 90 optane
SE +/- 8669.82, N = 12
84846.20
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Max Bandwidth - 3:1 Reads-Writes
MB/s, More Is Better
under load 90
SE +/- 11447.94, N = 12
118317.47
under load 90 optane
SE +/- 7793.67, N = 12
51488.77
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Max Bandwidth - 2:1 Reads-Writes
MB/s, More Is Better
under load 90
SE +/- 11627.72, N = 12
116346.14
under load 90 optane
SE +/- 8568.65, N = 12
43504.76
20K
40K
60K
80K
100K


Intel Memory Latency Checker
Test: Max Bandwidth - 1:1 Reads-Writes
MB/s, More Is Better
under load 90
SE +/- 11708.05, N = 12
115667.50
under load 90 optane
SE +/- 8570.03, N = 12
37410.96
20K
40K
60K
80K
100K
Intel Memory Latency Checker
Test: Max Bandwidth - Stream-Triad Like
MB/s, More Is Better
under load 90
SE +/- 11013.58, N = 12
122866.16
under load 90 optane
SE +/- 6168.54, N = 12
39486.09
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Peak Injection Bandwidth - All Reads
MB/s, More Is Better
under load 90
SE +/- 5.52, N = 3
154506.2
under load 90 optane
SE +/- 227.29, N = 3
92976.2
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Peak Injection Bandwidth - 3:1 Reads-Writes
MB/s, More Is Better
under load 90
SE +/- 75.92, N = 3
145144.5
under load 90 optane
SE +/- 115.24, N = 3
44762.8
30K
60K
90K
120K
150K



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