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# 0610-optane

2 x Intel Xeon Gold 5220R testing with a HPE ProLiant DL360 Gen10 (U32 BIOS) and Matrox MGA G200eH3 on Ubuntu 18.04 via the Phoronix Test Suite.

**Automated Executive Summary**

*under memory load90 had the most wins, coming in first place for 90% of the tests.*

*Based on the geometric mean of all complete results, the fastest (under memory load90) was 1.016x the speed of the slowest (no load).*

## Test Systems:

### under memory load90

### no load

Processor: 2 x Intel Xeon Gold 5220R (48 Cores / 96 Threads), Motherboard: HPE ProLiant DL360 Gen10 (U32 BIOS),

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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

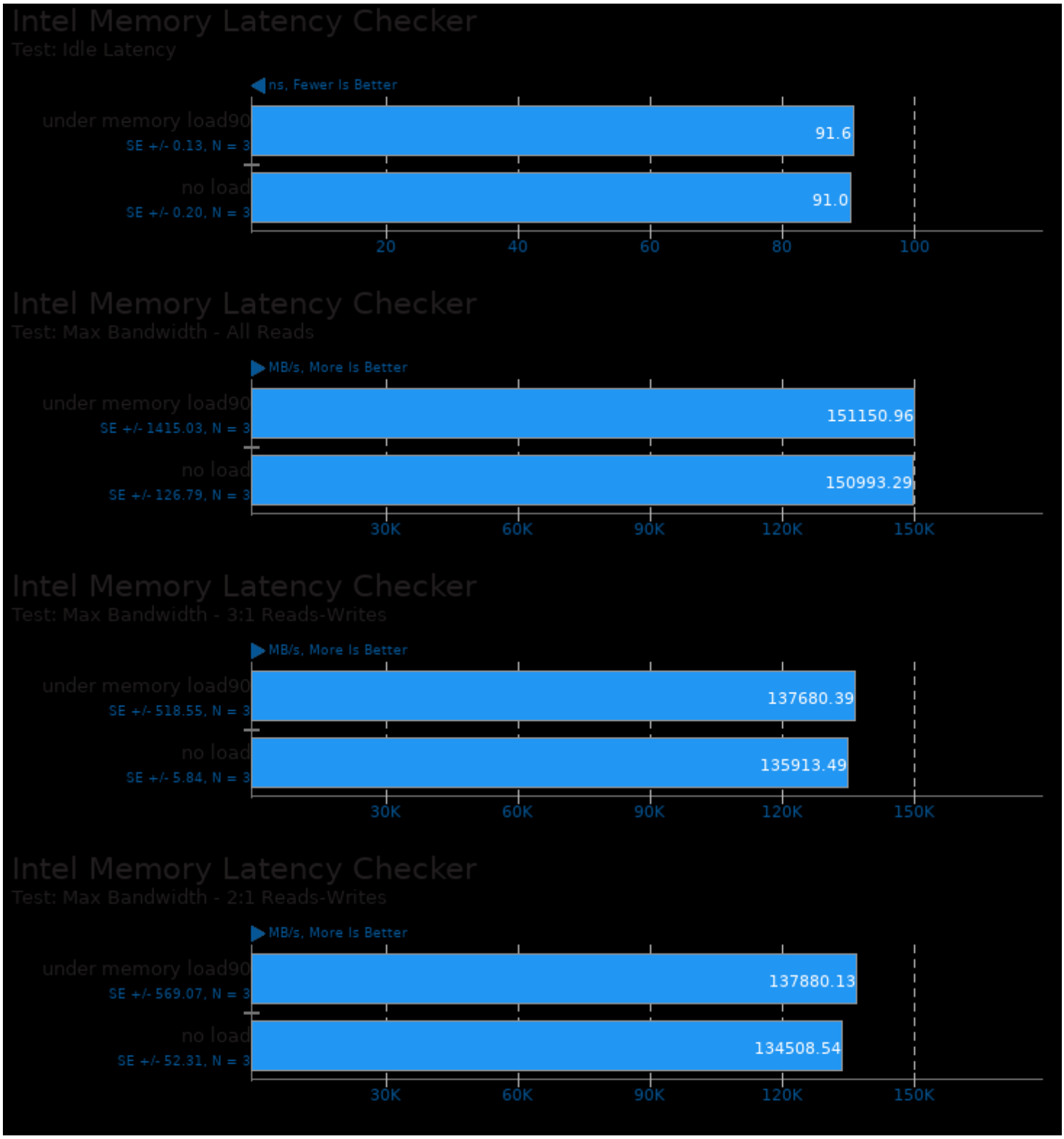
OS: Ubuntu 18.04, Kernel: 4.15.0-140-generic (x86_64), Compiler: GCC 7.5.0, File-System: ext4, Screen Resolution: 1024x768

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

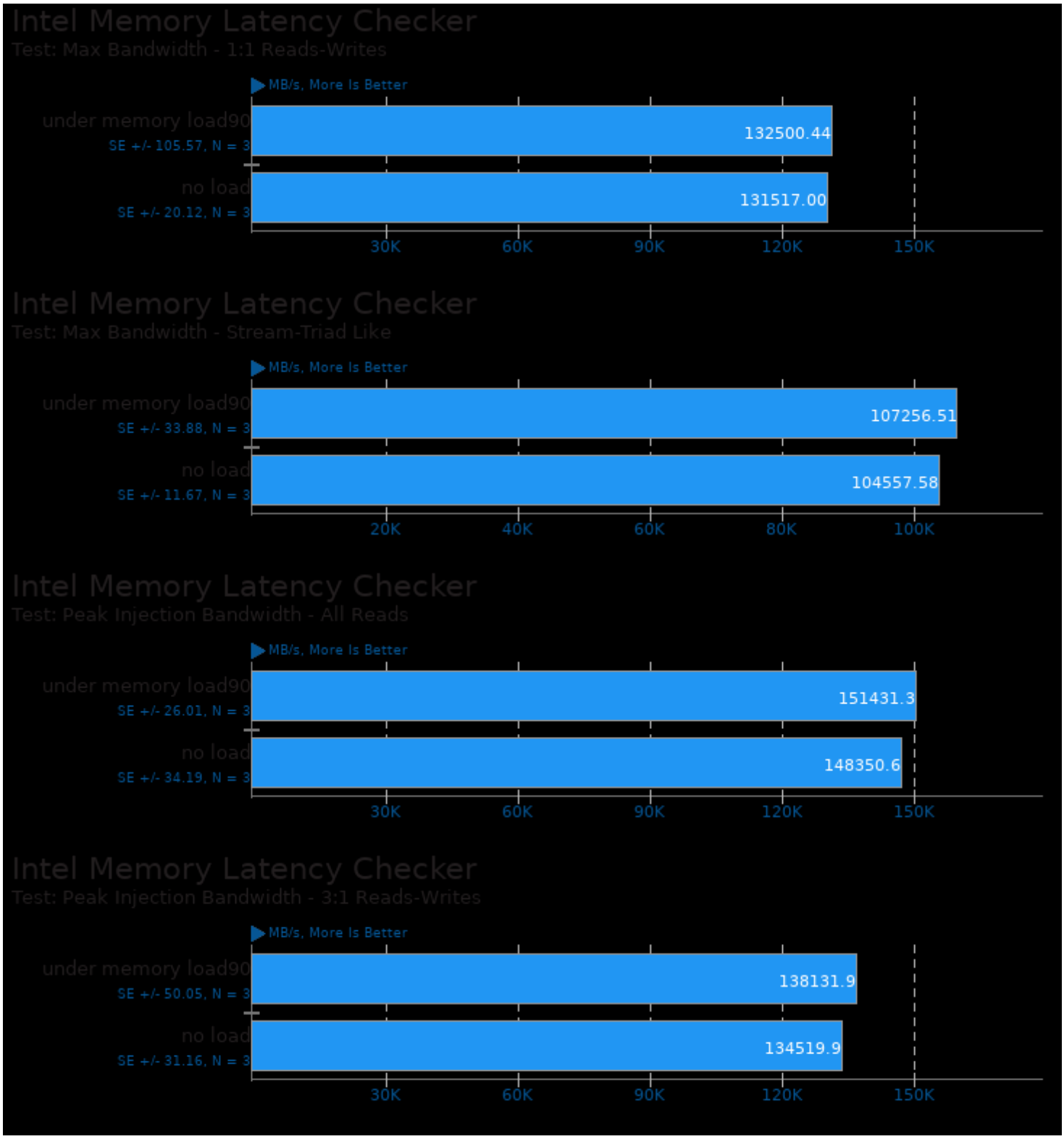
| | under memory load90 | no load |
|---|---|---|
| **Intel Memory Latency Checker - Idle Latency (ns)** | **91.6** | **91.0** |
| **Normalized** | 99.34% | 100% |
| **Standard Deviation** | 0.3% | 0.4% |
| **Intel Memory Latency Checker - Max Bandwidth - All Reads (MB/s)** | **151151** | **150993** |
| **Normalized** | 100% | 99.9% |
| **Standard Deviation** | 1.6% | 0.1% |
| **Intel Memory Latency Checker - Max Bandwidth - 3:1 Reads-Writes (MB/s)** | **137680** | **135913** |
| **Normalized** | 100% | 98.72% |
| **Standard Deviation** | 0.7% | 0% |
| **Intel Memory Latency Checker - Max Bandwidth - 2:1 Reads-Writes (MB/s)** | **137880** | **134509** |
| **Normalized** | 100% | 97.55% |
| **Standard Deviation** | 0.7% | 0.1% |
| **Intel Memory Latency Checker - Max Bandwidth - 1:1 Reads-Writes (MB/s)** | **132500** | **131517** |
| **Normalized** | 100% | 99.26% |
| **Standard Deviation** | 0.1% | 0% |
| **Intel Memory Latency Checker - Max Bandwidth - Stream-Triad Like (MB/s)** | **107257** | **104558** |
| **Normalized** | 100% | 97.48% |
| **Standard Deviation** | 0.1% | 0% |
| **Intel Memory Latency Checker - P.I.B - All Reads** | **151431** | **148351** |
| **Normalized** | 100% | 97.97% |
| **Standard Deviation** | 0% | 0% |
| **Intel Memory Latency Checker - P.I.B - 3:1 Reads-Writes (MB/s)** | **138132** | **134520** |
| **Normalized** | 100% | 97.39% |
| **Standard Deviation** | 0.1% | 0% |
| **Intel Memory Latency Checker - P.I.B - 2:1 Reads-Writes (MB/s)** | **138136** | **133714** |
| **Normalized** | 100% | 96.8% |
| **Standard Deviation** | 0% | 0% |

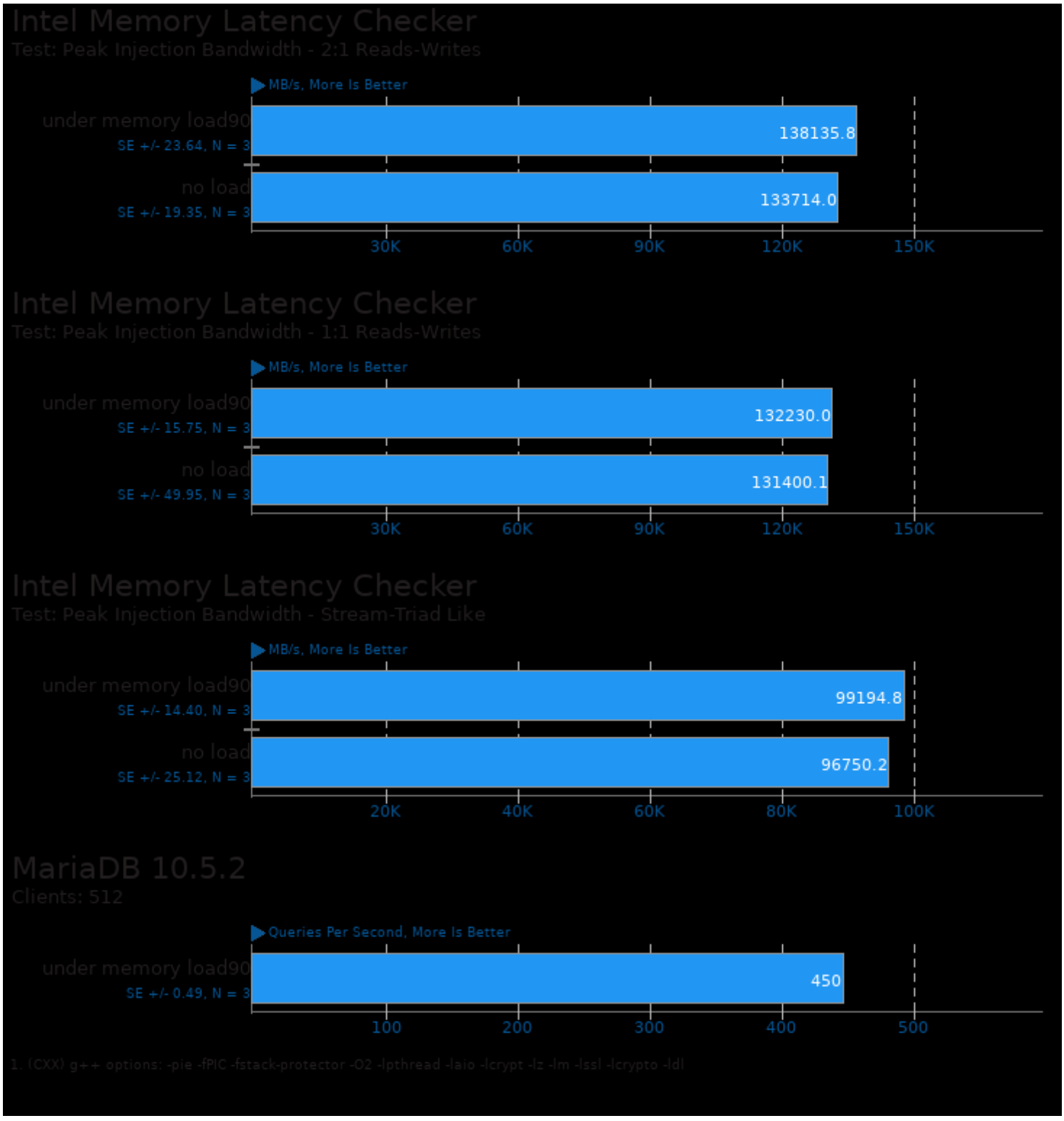
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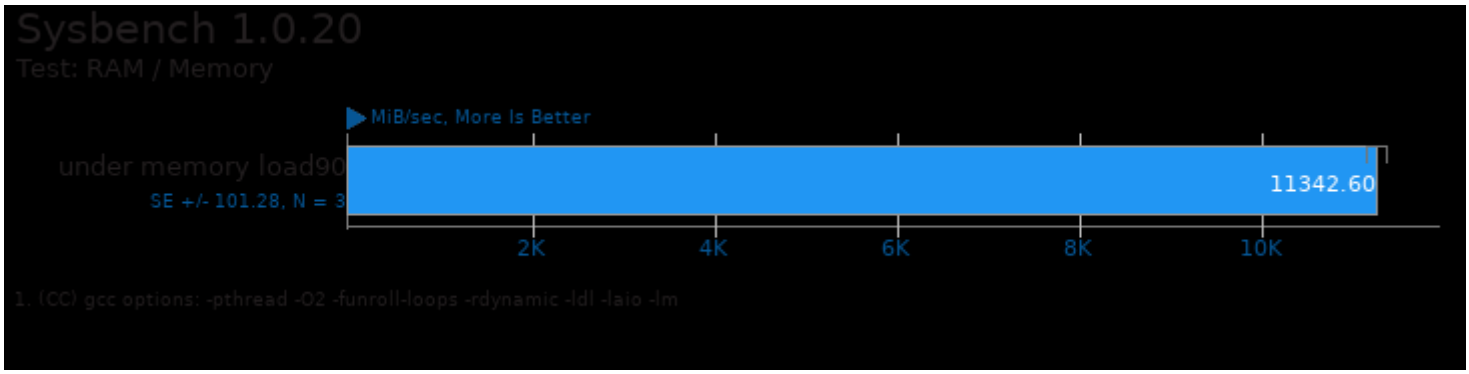
| | | |
|---|---|---|
| **Intel Memory Latency Checker - P.I.B - 1:1 Reads-Writes (MB/s)** | **132230** | **131400** |
| **Normalized** | 100% | 99.37% |
| **Standard Deviation** | 0% | 0.1% |
| **Intel Memory Latency Checker - P.I.B - Stream-Triad Like (MB/s)** | **99195** | **96750** |
| **Normalized** | 100% | 97.54% |
| **Standard Deviation** | 0% | 0% |
| **MariaDB - 512 (Queries/sec)** | 450 | |
| **Standard Deviation** | 0.2% | |
| **Sysbench - RAM / Memory (MiB/sec)** | 11343 | |
| **Standard Deviation** | 1.5% | |


Intel Memory Latency Checker
Test: Idle Latency
ns, Fewer Is Better
under memory load90
SE +/- 0.13, N = 3
91.6
no load
SE +/- 0.20, N = 3
91.0
20
40
60
80
100
Intel Memory Latency Checker
Test: Max Bandwidth - All Reads
MB/s, More Is Better
under memory load90
SE +/- 1415.03, N = 3
151150.96
no load
SE +/- 126.79, N = 3
150993.29
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Max Bandwidth - 3:1 Reads-Writes
MB/s, More Is Better
under memory load90
SE +/- 518.55, N = 3
137680.39
no load
SE +/- 5.84, N = 3
135913.49
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Max Bandwidth - 2:1 Reads-Writes
MB/s, More Is Better
under memory load90
SE +/- 569.07, N = 3
137880.13
no load
SE +/- 52.31, N = 3
134508.54
30K
60K
90K
120K
150K

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Intel Memory Latency Checker
Test: Max Bandwidth - 1:1 Reads-Writes
MB/s, More Is Better
under memory load90
SE +/- 105.57, N = 3
132500.44
no load
SE +/- 20.12, N = 3
131517.00
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Max Bandwidth - Stream-Triad Like
MB/s, More Is Better
under memory load90
SE +/- 33.88, N = 3
107256.51
no load
SE +/- 11.67, N = 3
104557.58
20K
40K
60K
80K
100K
Intel Memory Latency Checker
Test: Peak Injection Bandwidth - All Reads
MB/s, More Is Better
under memory load90
SE +/- 26.01, N = 3
151431.3
no load
SE +/- 34.19, N = 3
148350.6
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Peak Injection Bandwidth - 3:1 Reads-Writes
MB/s, More Is Better
under memory load90
SE +/- 50.05, N = 3
138131.9
no load
SE +/- 31.16, N = 3
134519.9
30K
60K
90K
120K
150K


Intel Memory Latency Checker
Test: Peak Injection Bandwidth - 2:1 Reads-Writes
MB/s, More Is Better
under memory load90
SE +/- 23.64, N = 3
138135.8
no load
SE +/- 19.35, N = 3
133714.0
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Peak Injection Bandwidth - 1:1 Reads-Writes
MB/s, More Is Better
under memory load90
SE +/- 15.75, N = 3
132230.0
no load
SE +/- 49.95, N = 3
131400.1
30K
60K
90K
120K
150K
Intel Memory Latency Checker
Test: Peak Injection Bandwidth - Stream-Triad Like
MB/s, More Is Better
under memory load90
SE +/- 14.40, N = 3
99194.8
no load
SE +/- 25.12, N = 3
96750.2
20K
40K
60K
80K
100K
MariaDB 10.5.2
Clients: 512
Queries Per Second, More Is Better
under memory load90
SE +/- 0.49, N = 3
450
100
200
300
400
500
1: (CXX) g++ options: -pie -fPIC -fstack-protector -O2 -lpthread -laio -lcrypt -lz -lm -lssl -lcrypto -ldl




*This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 06:57.*