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CentOS-740-TunedThroughput-LPDisabled-RUN3

CentOS-operating-system-Dell-740-Default-tuning-profile-hyperthreading-off

Test Systems:

CentOS-740-TunedThroughput-LPDisabled-RUN3---07-30-2021_20-38-26

Processor: 2 x Intel Xeon Gold 6254 @ 4.00GHz (36 Cores), Motherboard: Dell 0YWR7D (2.10.0 BIOS), Memory: 4 x 16384 MB DDR4-2933MT/s 18ASF2G72PDZ-2G9E1, Disk: 4 x 480GB PERC H740P Adp + 31GB USB DISK 2.0, Graphics: mgadrmfb, Monitor: DELL P2217H

OS: CentOS Linux 8, Kernel: 4.18.0-147.el8.x86_64 (x86_64), Compiler: GCC 8.4.1 20200928, File-System: xfs, Screen Resolution: 1600x900

Kernel Notes: Transparent Huge Pages: always
Compiler Notes: --build=x86_64-redhat-linux --disable-libmpx --disable-libunwind-exceptions --enable-__cxa_atexit --enable-bootstrap --enable-cet --enable-checking=release --enable-gnu-indirect-function --enable-gnu-unique-object --enable-initfini-array --enable-languages=c,c++,fortran,lto --enable-multilib --enable-offload-targets=nvptx-none --enable-plugin --enable-shared --enable-threads=posix --mandir=/usr/share/man --with-arch_32=x86-64 --with-gcc-major-version-only --with-isl --with-linker-hash-style=gnu --with-tune=generic --without-cuda-driver
Disk Notes: MQ-DEADLINE / attr2,inode64,noquota,relatime,rw,seclabel,sunit=512,swidth=512 / Block Size: 4096
Processor Notes: Scaling Governor: intel_pstate performance - CPU Microcode: 0x5003003

CentOS-740-TunedThroughput-LPDisabled-RUN3

Security Notes: SELinux + 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

	CentOS-740-TunedThroughput-LPDisabled-RUN3---07-30-2021_20-38-26
Sysbench - CPU (Events/sec)	43471
Standard Deviation	17.3%
IOzone - 4Kb - 512MB - Write Performance (MB/s)	45.41
Standard Deviation	61.2%
Intel Memory Latency Checker - Max Bandwidth - All Reads (MB/s)	83405
Standard Deviation	6.5%
Intel Memory Latency Checker - Max Bandwidth - 3:1 Reads-Writes (MB/s)	71175
Standard Deviation	14.1%
Intel Memory Latency Checker - Max Bandwidth - 2:1 Reads-Writes (MB/s)	69047
Standard Deviation	14.8%
Intel Memory Latency Checker - Max Bandwidth - 1:1 Reads-Writes (MB/s)	62312
Standard Deviation	10.4%
Intel Memory Latency Checker - Max Bandwidth - Stream-Triad Like (MB/s)	75537
Standard Deviation	4.7%
Intel Memory Latency Checker - P.I.B - All Reads (MB/s)	86533
Standard Deviation	0%
Intel Memory Latency Checker - P.I.B - 3:1 Reads-Writes (MB/s)	75318
Standard Deviation	0.1%
Intel Memory Latency Checker - P.I.B - 2:1 Reads-Writes (MB/s)	72770
Standard Deviation	0.1%
Intel Memory Latency Checker - P.I.B - 1:1 Reads-Writes (MB/s)	66678
Standard Deviation	0.2%
Intel Memory Latency Checker - P.I.B - Stream-Triad Like (MB/s)	69903
Standard Deviation	0.2%
RAMspeed SMP - Add - Integer (MB/s)	13559
Standard Deviation	16.1%
RAMspeed SMP - Copy - Integer (MB/s)	14707
Standard Deviation	2.7%
RAMspeed SMP - Scale - Integer (MB/s)	12155
Standard Deviation	8.5%
RAMspeed SMP - Triad - Integer (MB/s)	13920
Standard Deviation	0.8%
RAMspeed SMP - Average - Integer (MB/s)	13294
Standard Deviation	0.2%
RAMspeed SMP - Add - Floating Point (MB/s)	11534
Standard Deviation	1.2%
RAMspeed SMP - Copy - Floating Point (MB/s)	15608
Standard Deviation	3.8%
RAMspeed SMP - Scale - Floating Point (MB/s)	12072

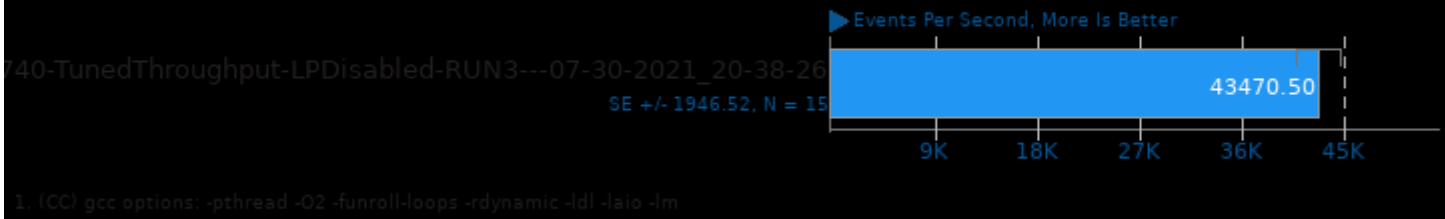
Standard Deviation	6.4%
RAMspeed SMP - Triad - Floating Point (MB/s)	11228
Standard Deviation	12.6%
RAMspeed SMP - Average - Floating Point (MB/s)	14187
Standard Deviation	0.7%
Stream - Copy (MB/s)	39346
Standard Deviation	3.3%
Stream - Scale (MB/s)	43835
Standard Deviation	6.2%
Stream - Triad (MB/s)	48366
Standard Deviation	3.9%
Stream - Add (MB/s)	48656
Standard Deviation	3.6%
MBW - Memory Copy - 128 MiB (MiB/s)	3659
Standard Deviation	0%
MBW - Memory Copy - 512 MiB (MiB/s)	3515
Standard Deviation	0%
MBW - Memory Copy - 1024 MiB (MiB/s)	3261
Standard Deviation	0.9%
MBW - Memory Copy - 4096 MiB (MiB/s)	3210
Standard Deviation	3.7%
MBW - Memory Copy - 8192 MiB (MiB/s)	2653
Standard Deviation	28.1%
MBW - M.C.F.B.S - 128 MiB (MiB/s)	3224
Standard Deviation	8.1%
MBW - M.C.F.B.S - 512 MiB (MiB/s)	3348
Standard Deviation	5.2%
MBW - M.C.F.B.S - 1024 MiB (MiB/s)	3419
Standard Deviation	5.3%
MBW - M.C.F.B.S - 4096 MiB (MiB/s)	3491
Standard Deviation	2.3%
MBW - M.C.F.B.S - 8192 MiB (MiB/s)	3360
Standard Deviation	14.2%
Intel Memory Latency Checker - Idle Latency (ns)	166.3
Standard Deviation	55.8%
Core-Latency - A.L.B.C.C (ns)	422.7121
pmbench - 1 - 50% (us - Page Latency)	0.0813
Standard Deviation	31.4%
pmbench - 4 - 50% (us - Page Latency)	0.0770
Standard Deviation	0.4%
pmbench - 16 - 50% (us - Page Latency)	0.0902
Standard Deviation	2.2%
pmbench - 1 - 100% Reads (us - Page Latency)	0.0395
Standard Deviation	0%
pmbench - 4 - 100% Reads (us - Page Latency)	0.0397
Standard Deviation	0.3%
pmbench - 1 - 100% Writes (us - Page Latency)	0.0352
Standard Deviation	0.2%
pmbench - 16 - 100% Reads (us - Page Latency)	0.0398
Standard Deviation	0.6%
pmbench - 4 - 100% Writes (us - Page Latency)	0.0436
Standard Deviation	28.5%
pmbench - 16 - 100% Writes (us - Page Latency)	0.0471

Standard Deviation	4.3%
pmbench - 1 - 8.R.2.W (us - Page Latency)	0.0880
Standard Deviation	0.1%
pmbench - 4 - 8.R.2.W (us - Page Latency)	0.1143
Standard Deviation	0.2%
pmbench - 16 - 8.R.2.W (us - Page Latency)	0.1174
Standard Deviation	2%

CentOS-740-TunedThroughput-LPDisabled-RUN3

Sysbench 1.0.20

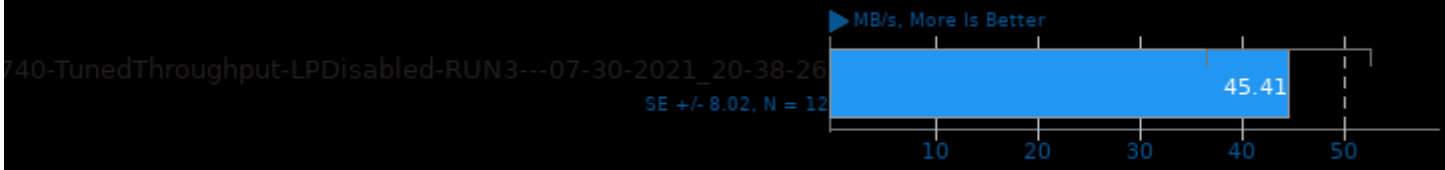
Test: CPU



1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

IOzone 3.465

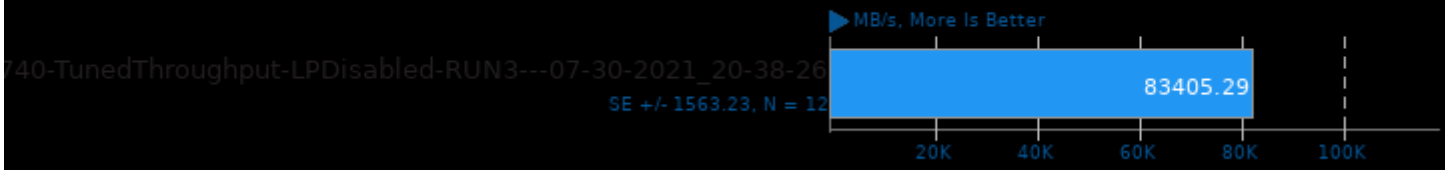
Record Size: 4Kb - File Size: 512MB - Disk Test: Write Performance



1. (CC) gcc options: -O3

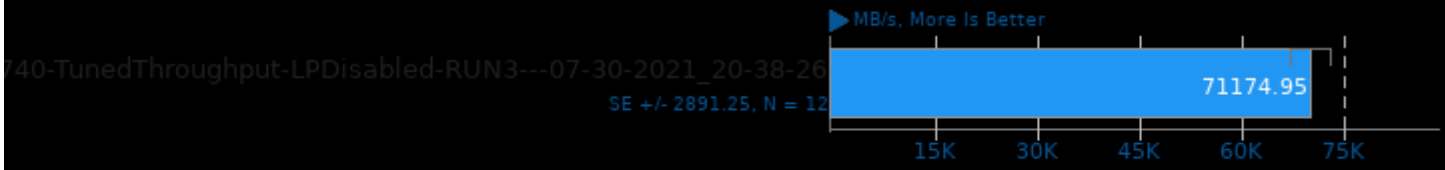
Intel Memory Latency Checker

Test: Max Bandwidth - All Reads



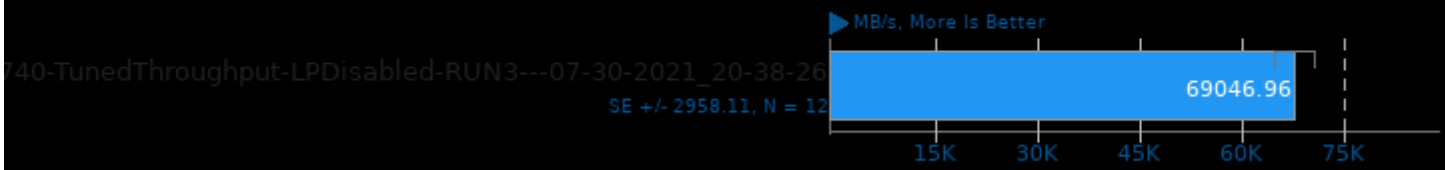
Intel Memory Latency Checker

Test: Max Bandwidth - 3:1 Reads-Writes



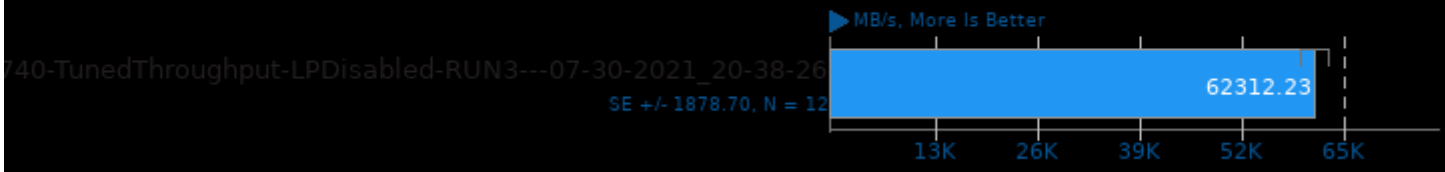
Intel Memory Latency Checker

Test: Max Bandwidth - 2:1 Reads-Writes



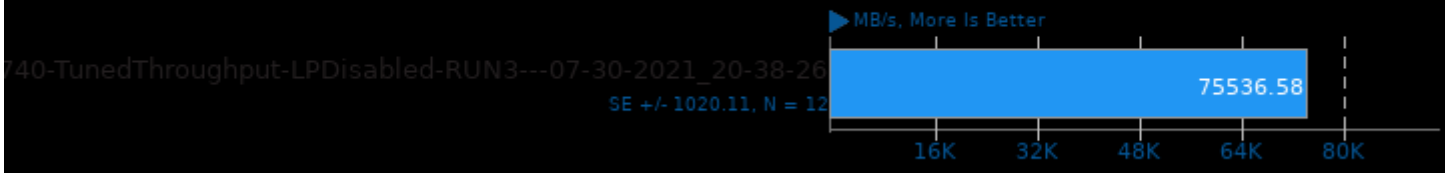
Intel Memory Latency Checker

Test: Max Bandwidth - 1:1 Reads-Writes



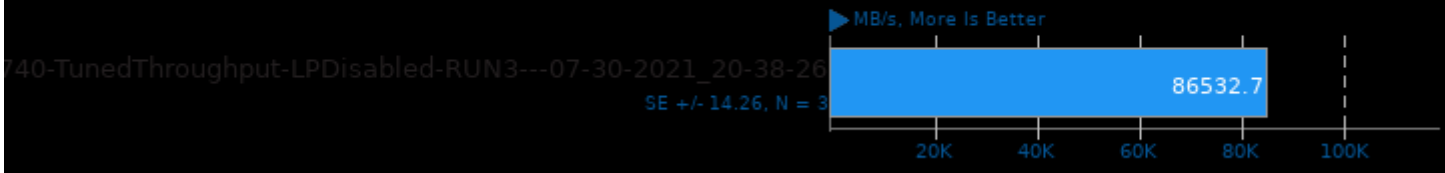
Intel Memory Latency Checker

Test: Max Bandwidth - Stream-Triad Like



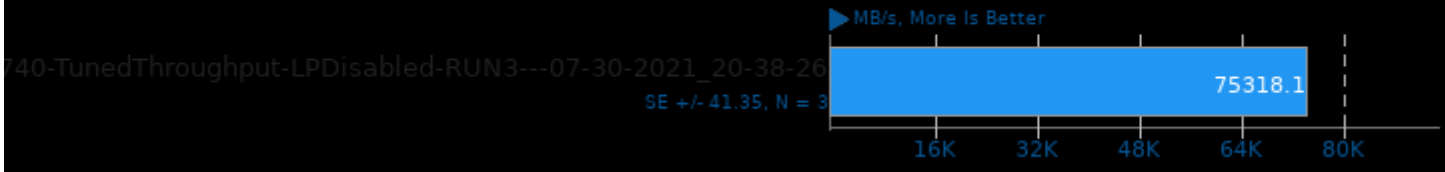
Intel Memory Latency Checker

Test: Peak Injection Bandwidth - All Reads



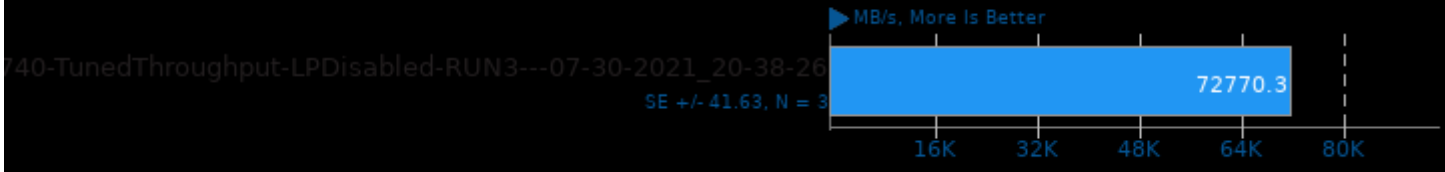
Intel Memory Latency Checker

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



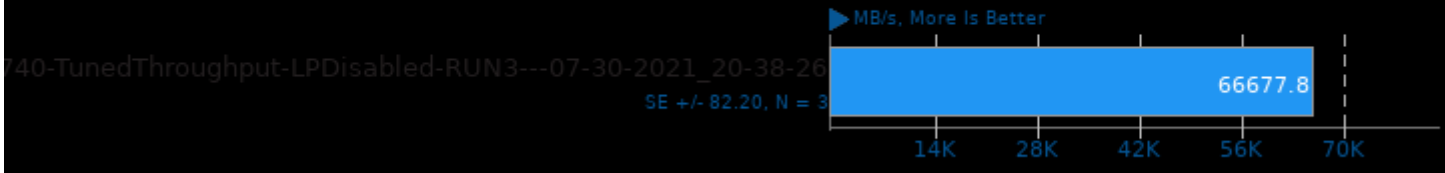
Intel Memory Latency Checker

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



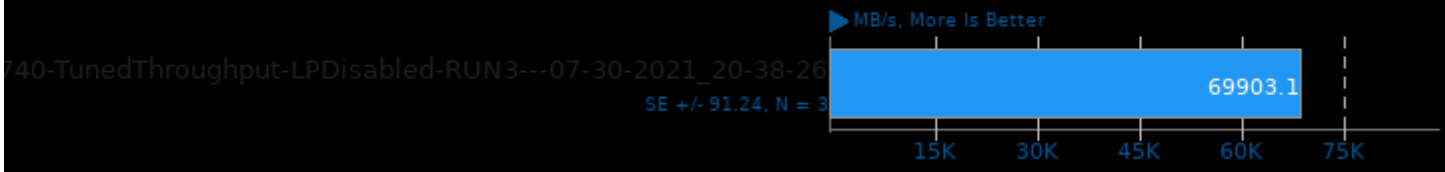
Intel Memory Latency Checker

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



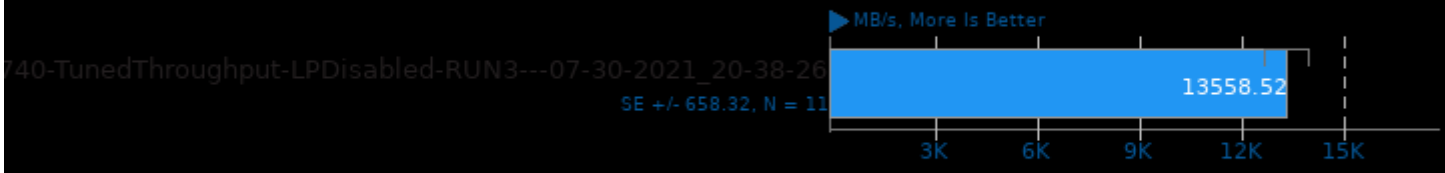
Intel Memory Latency Checker

Test: Peak Injection Bandwidth - Stream-Triad Like



RAMspeed SMP 3.5.0

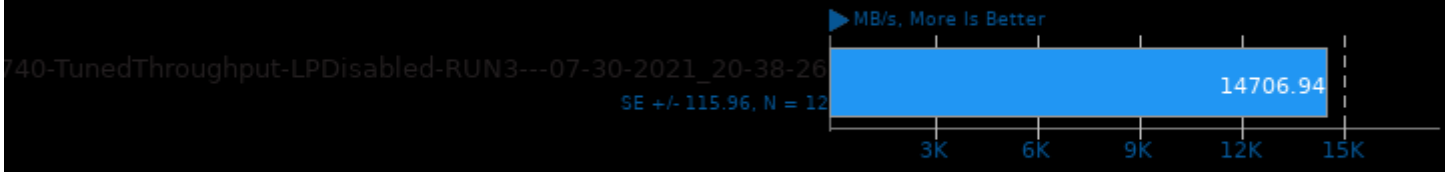
Type: Add - Benchmark: Integer



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

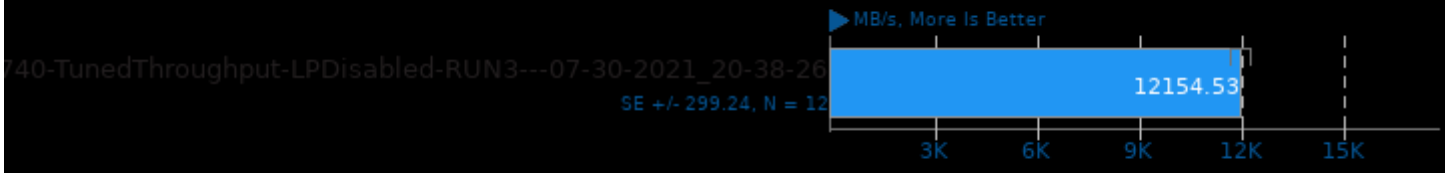
Type: Copy - Benchmark: Integer



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

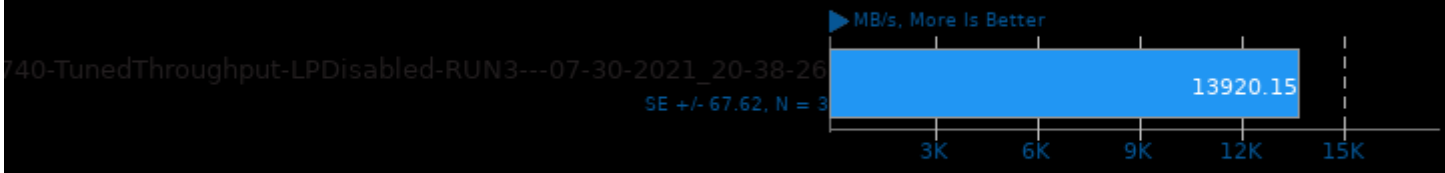
Type: Scale - Benchmark: Integer



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

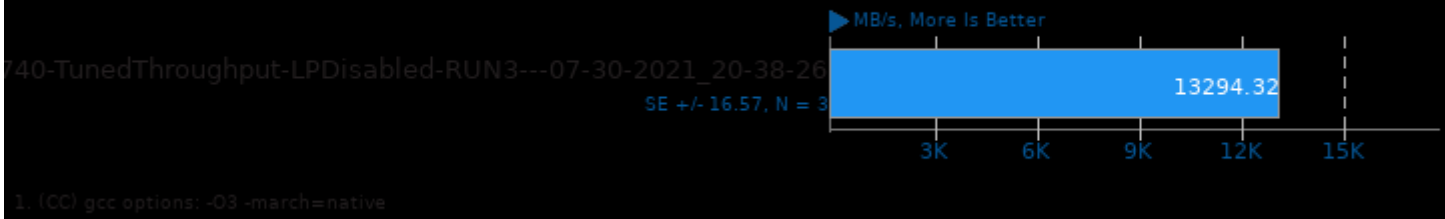
Type: Triad - Benchmark: Integer



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

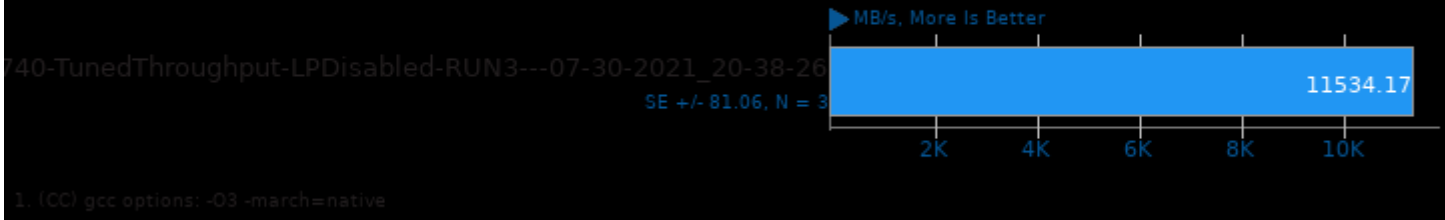
Type: Average - Benchmark: Integer



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

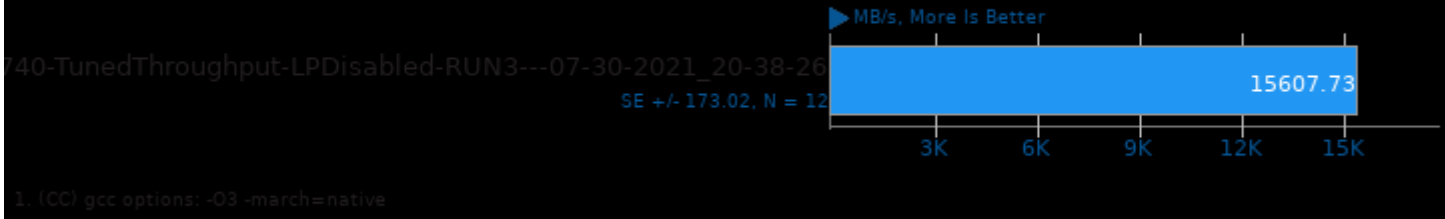
Type: Add - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

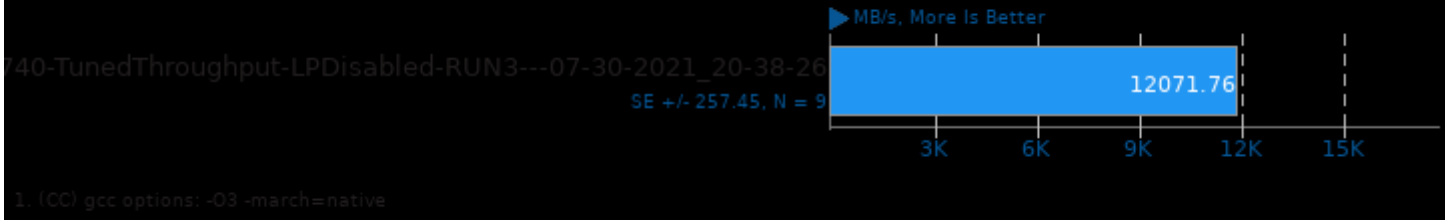
Type: Copy - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

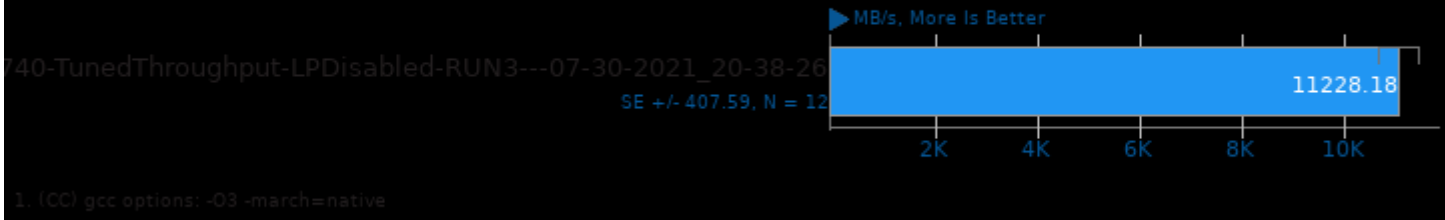
Type: Scale - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

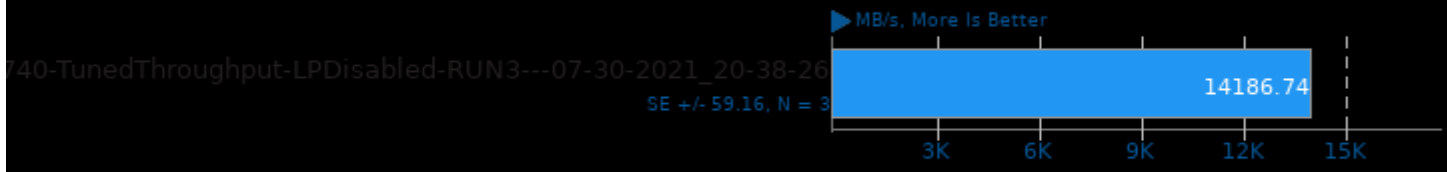
Type: Triad - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

RAMspeed SMP 3.5.0

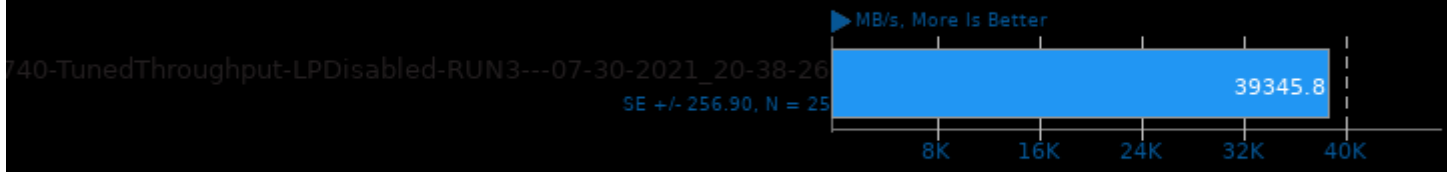
Type: Average - Benchmark: Floating Point



1. (CC) gcc options: -O3 -march=native

Stream 2013-01-17

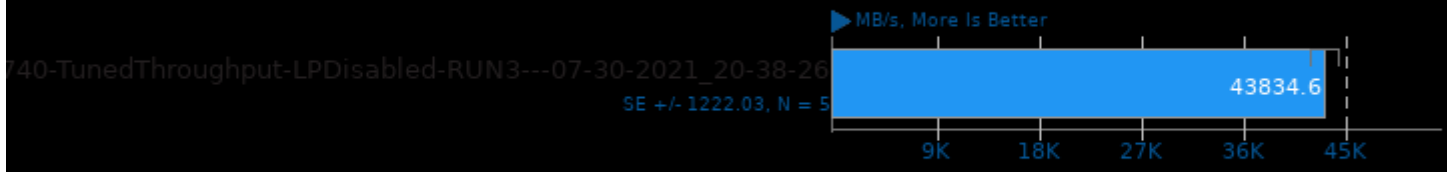
Type: Copy



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

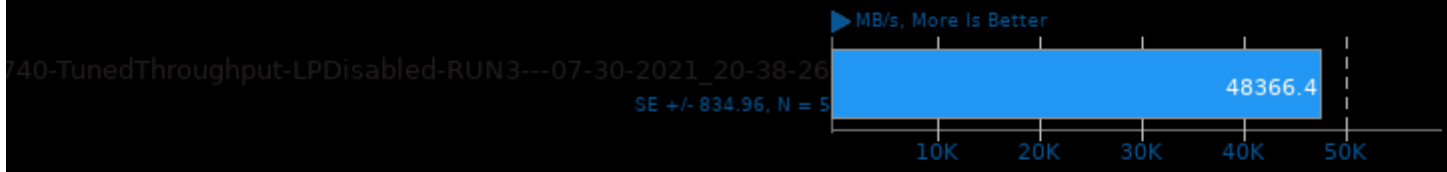
Type: Scale



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

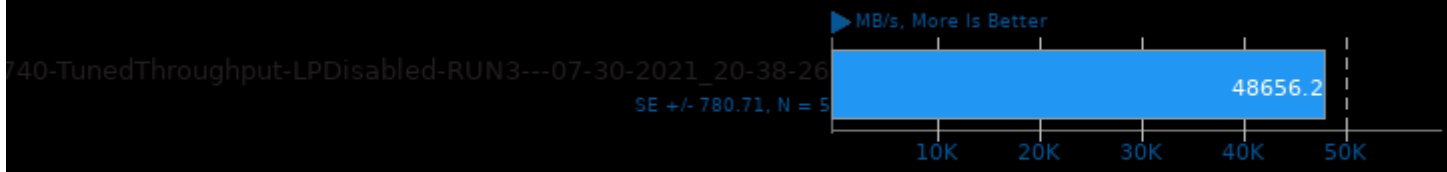
Type: Triad



1. (CC) gcc options: -O3 -march=native -fopenmp

Stream 2013-01-17

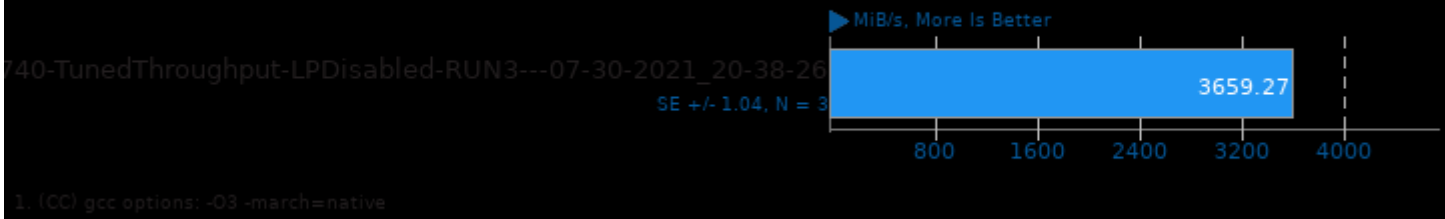
Type: Add



1. (CC) gcc options: -O3 -march=native -fopenmp

MBW 2018-09-08

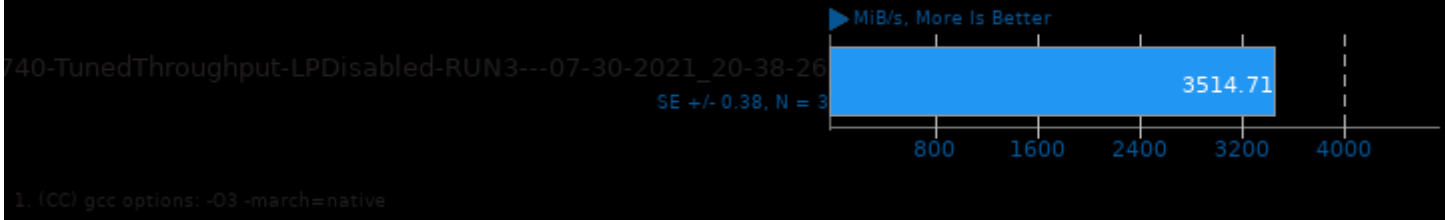
Test: Memory Copy - Array Size: 128 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

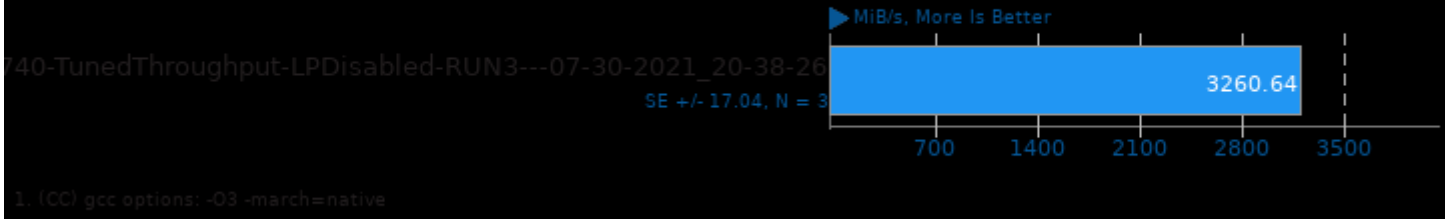
Test: Memory Copy - Array Size: 512 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

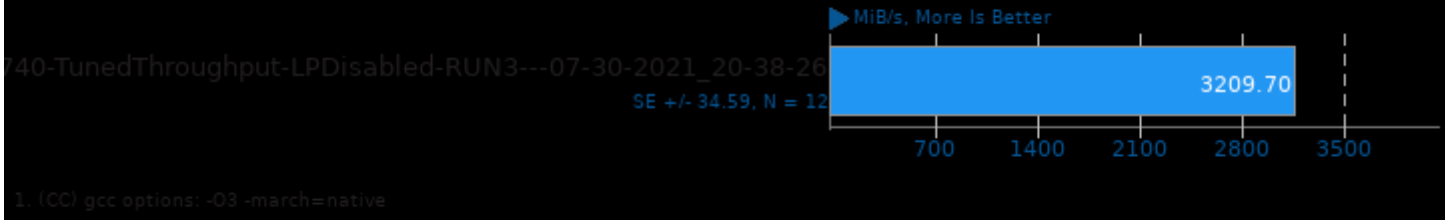
Test: Memory Copy - Array Size: 1024 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

Test: Memory Copy - Array Size: 4096 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

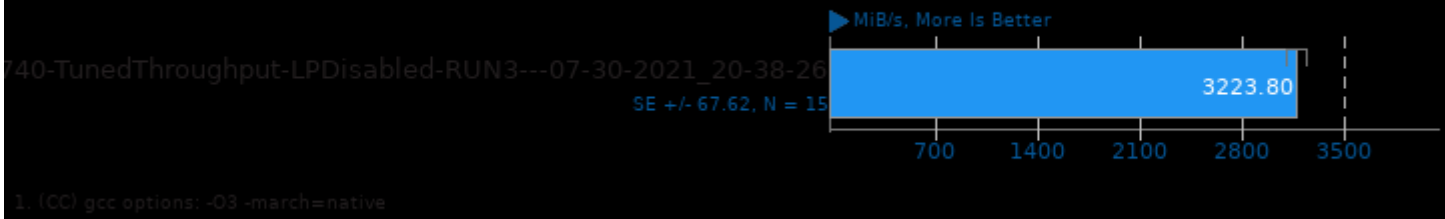
Test: Memory Copy - Array Size: 8192 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

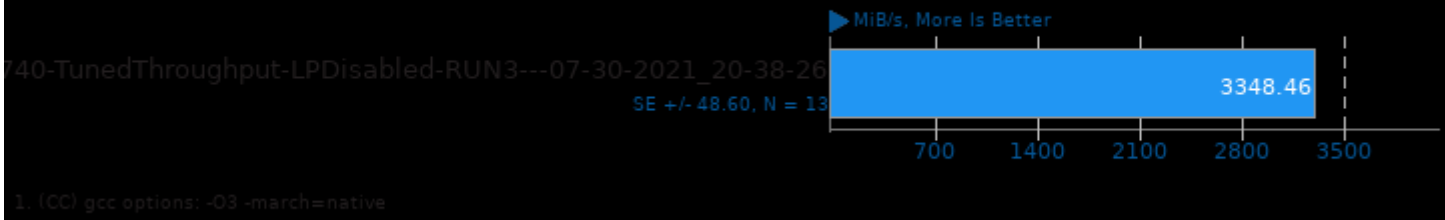
Test: Memory Copy, Fixed Block Size - Array Size: 128 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

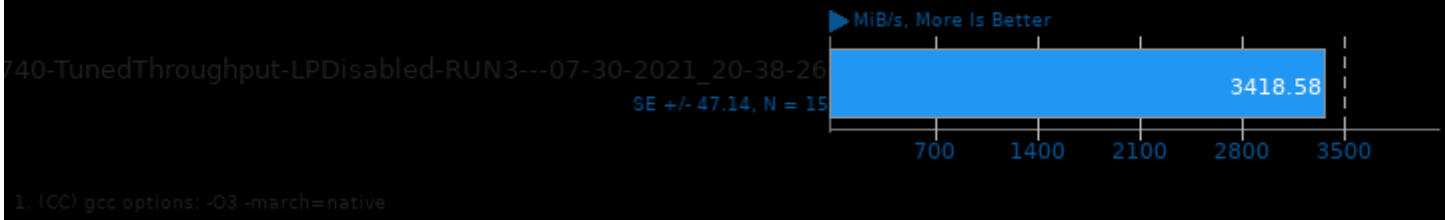
Test: Memory Copy, Fixed Block Size - Array Size: 512 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

Test: Memory Copy, Fixed Block Size - Array Size: 1024 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

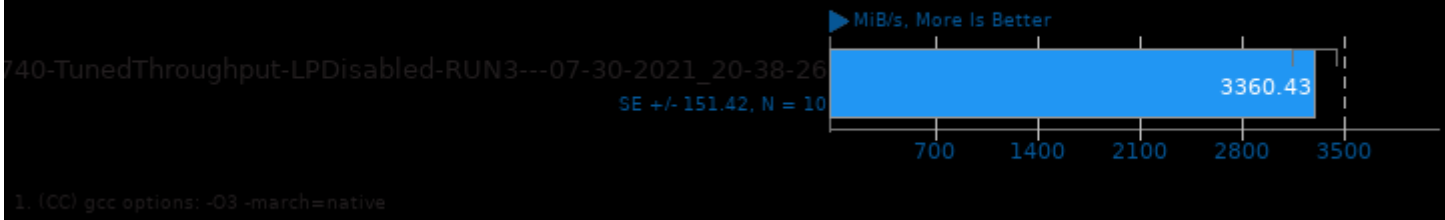
Test: Memory Copy, Fixed Block Size - Array Size: 4096 MiB



1. (CC) gcc options: -O3 -march=native

MBW 2018-09-08

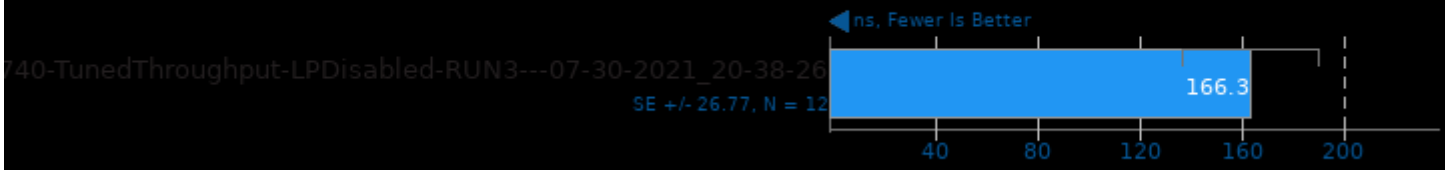
Test: Memory Copy, Fixed Block Size - Array Size: 8192 MiB



1. (CC) gcc options: -O3 -march=native

Intel Memory Latency Checker

Test: Idle Latency



Core-Latency

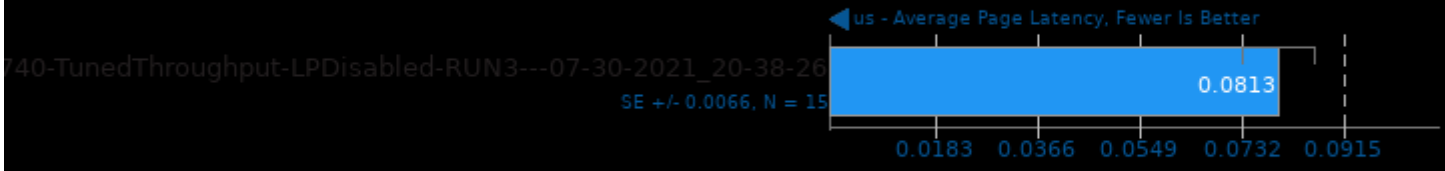
Average Latency Between CPU Cores



1. (CXX) g++ options: -std=c++11 -pthread -O3

pmbench

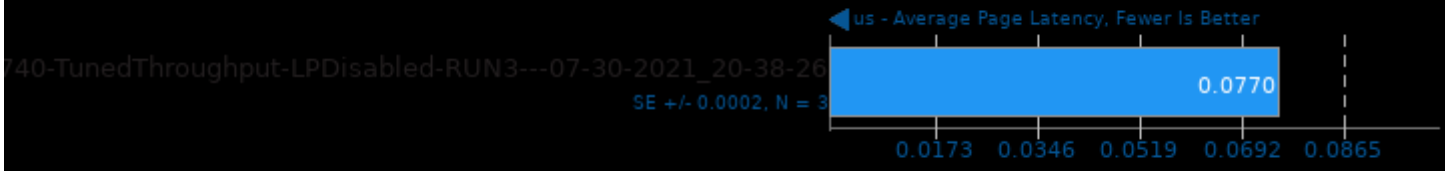
Concurrent Worker Threads: 1 - Read-Write Ratio: 50%



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

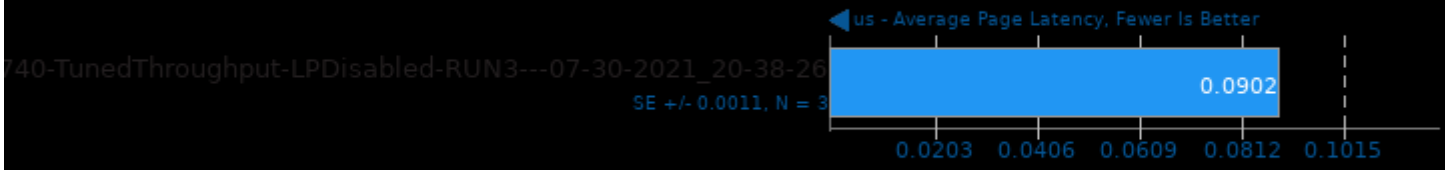
Concurrent Worker Threads: 4 - Read-Write Ratio: 50%



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

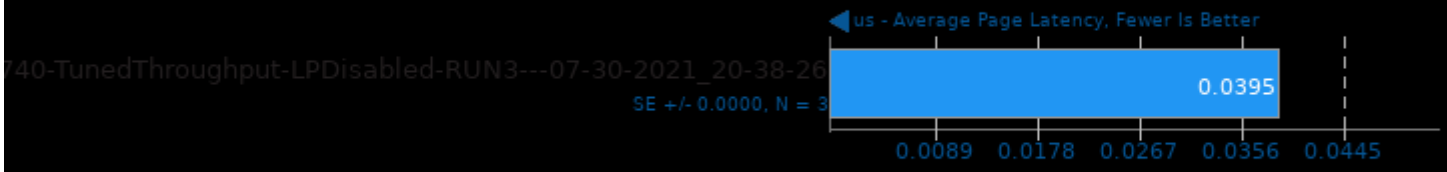
Concurrent Worker Threads: 16 - Read-Write Ratio: 50%



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

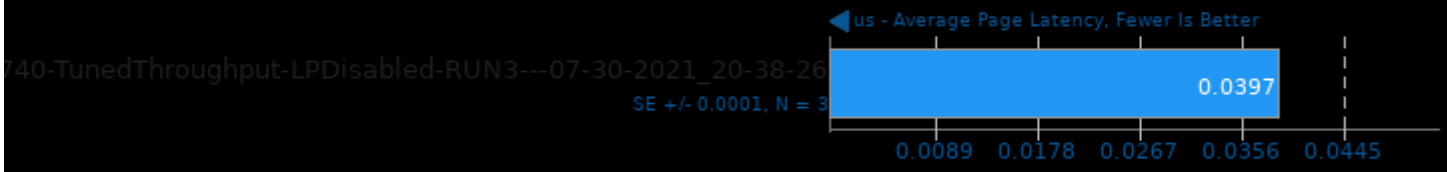
Concurrent Worker Threads: 1 - Read-Write Ratio: 100% Reads



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

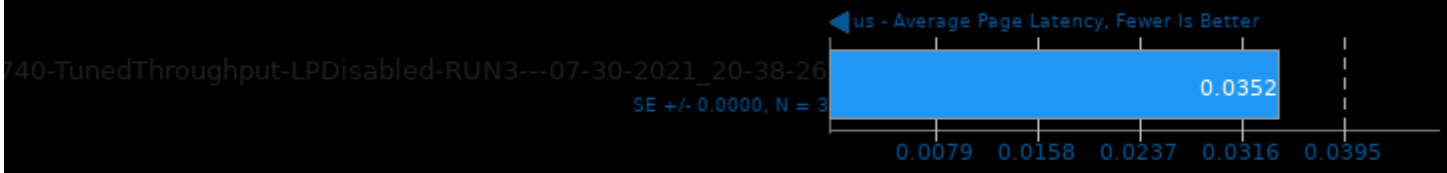
Concurrent Worker Threads: 4 - Read-Write Ratio: 100% Reads



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

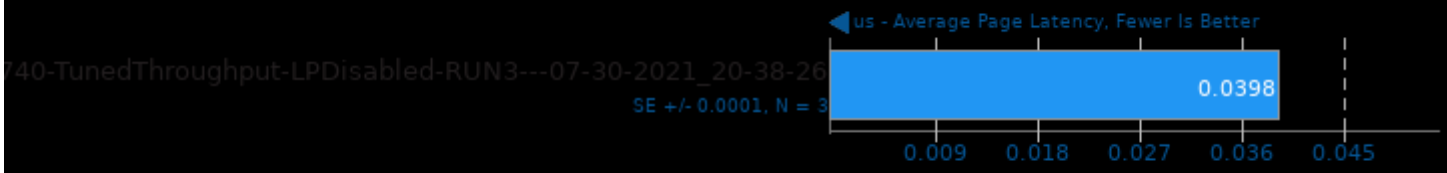
Concurrent Worker Threads: 1 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

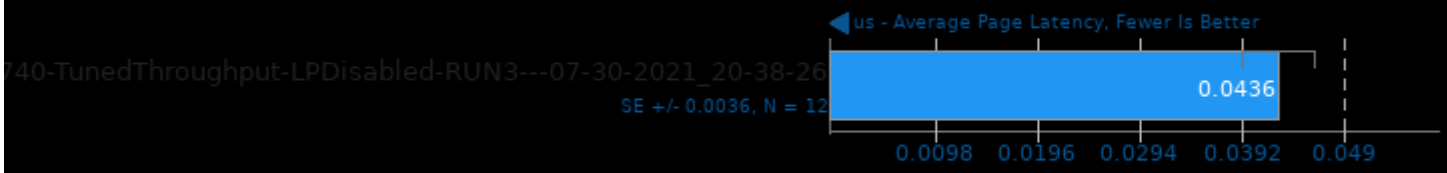
Concurrent Worker Threads: 16 - Read-Write Ratio: 100% Reads



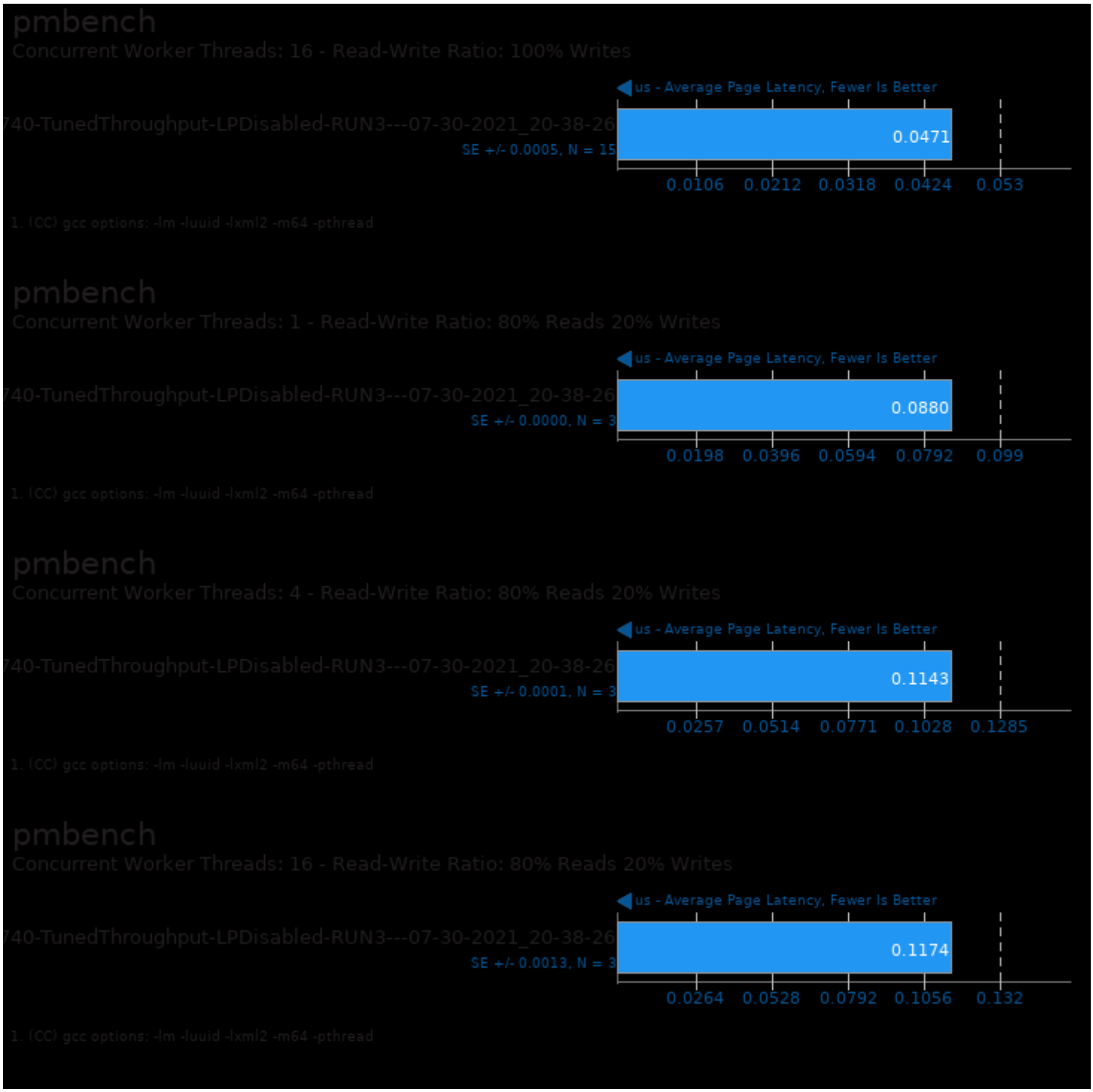
1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread

pmbench

Concurrent Worker Threads: 4 - Read-Write Ratio: 100% Writes



1. (CC) gcc options: -lm -luuid -lxml2 -m64 -pthread



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