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Core i9 10980XE Linux Ubuntu

Intel Core i9-10980XE testing with a ASRock X299 Steel Legend (P1.30 BIOS) and llvmpipe on Ubuntu 22.04 via the Phoronix Test Suite.

Automated Executive Summary

Core i9 10980XE had the most wins, coming in first place for 45% of the tests.

Based on the geometric mean of all complete results, the fastest (Intel) was 1.005x the speed of the slowest (i9-10980XE). Core i9 10980XE was 0.998x the speed of Intel and i9-10980XE was 0.998x the speed of Core i9 10980XE.

Test Systems:

Core i9 10980XE

i9-10980XE

Core i9 10980XE Linux Ubuntu

Intel

Processor: Intel Core i9-10980XE @ 4.80GHz (18 Cores / 36 Threads), Motherboard: ASRock X299 Steel Legend (P1.30 BIOS), Chipset: Intel Sky Lake-E DMI3 Registers, Memory: 32GB, Disk: Samsung SSD 970 PRO 512GB, Graphics: llvmpipe, Audio: Realtek ALC1220, Network: Intel I219-V + Intel I211

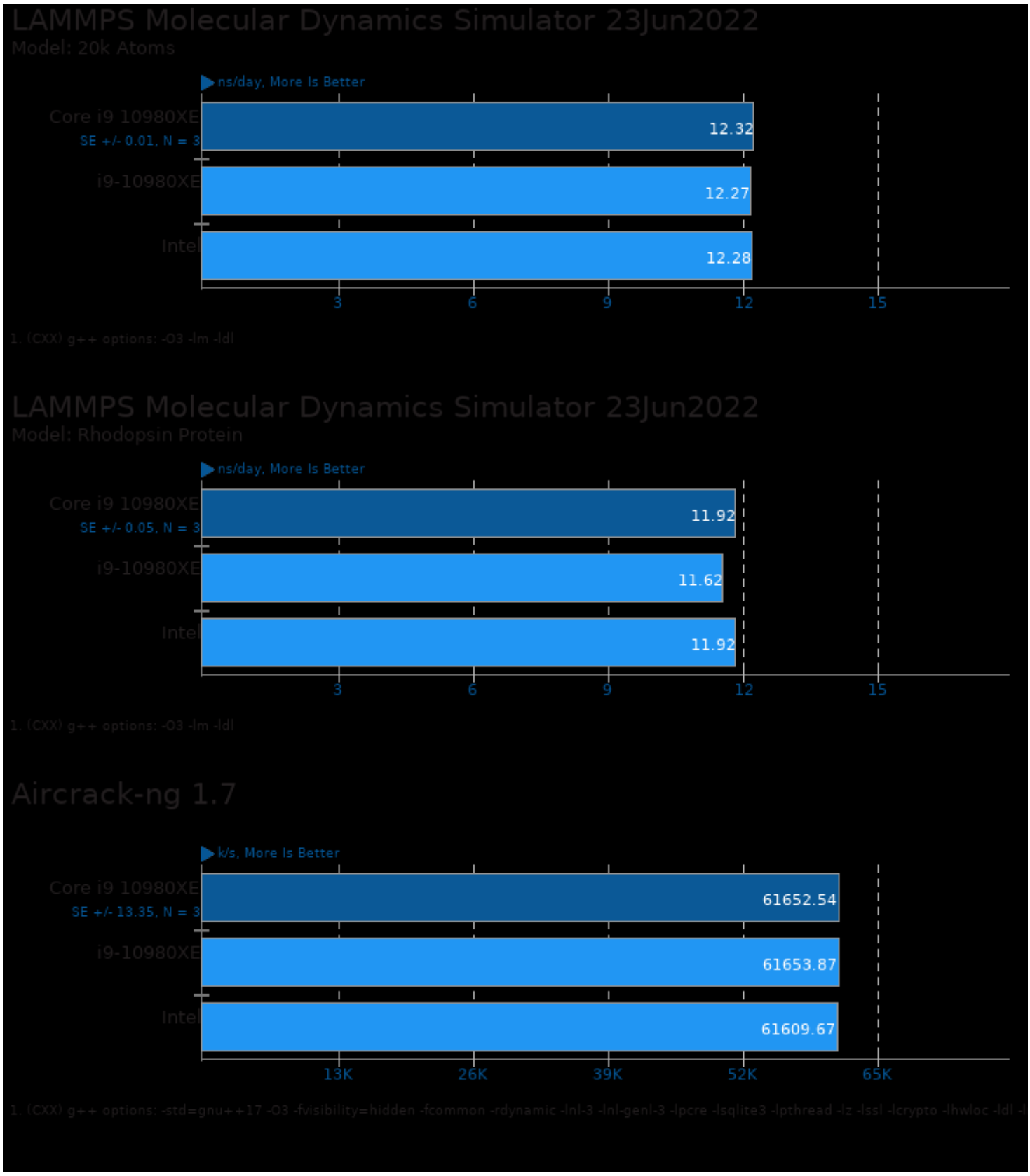
OS: Ubuntu 22.04, Kernel: 5.19.0-051900rc7-generic (x86_64), Desktop: GNOME Shell 42.2, Display Server: X Server 1.21.1.3, OpenGL: 4.5 Mesa 22.0.1 (LLVM 13.0.1 256 bits), Vulkan: 1.2.204, Compiler: GCC 11.2.0, File-System: ext4, Screen Resolution: 1024x768

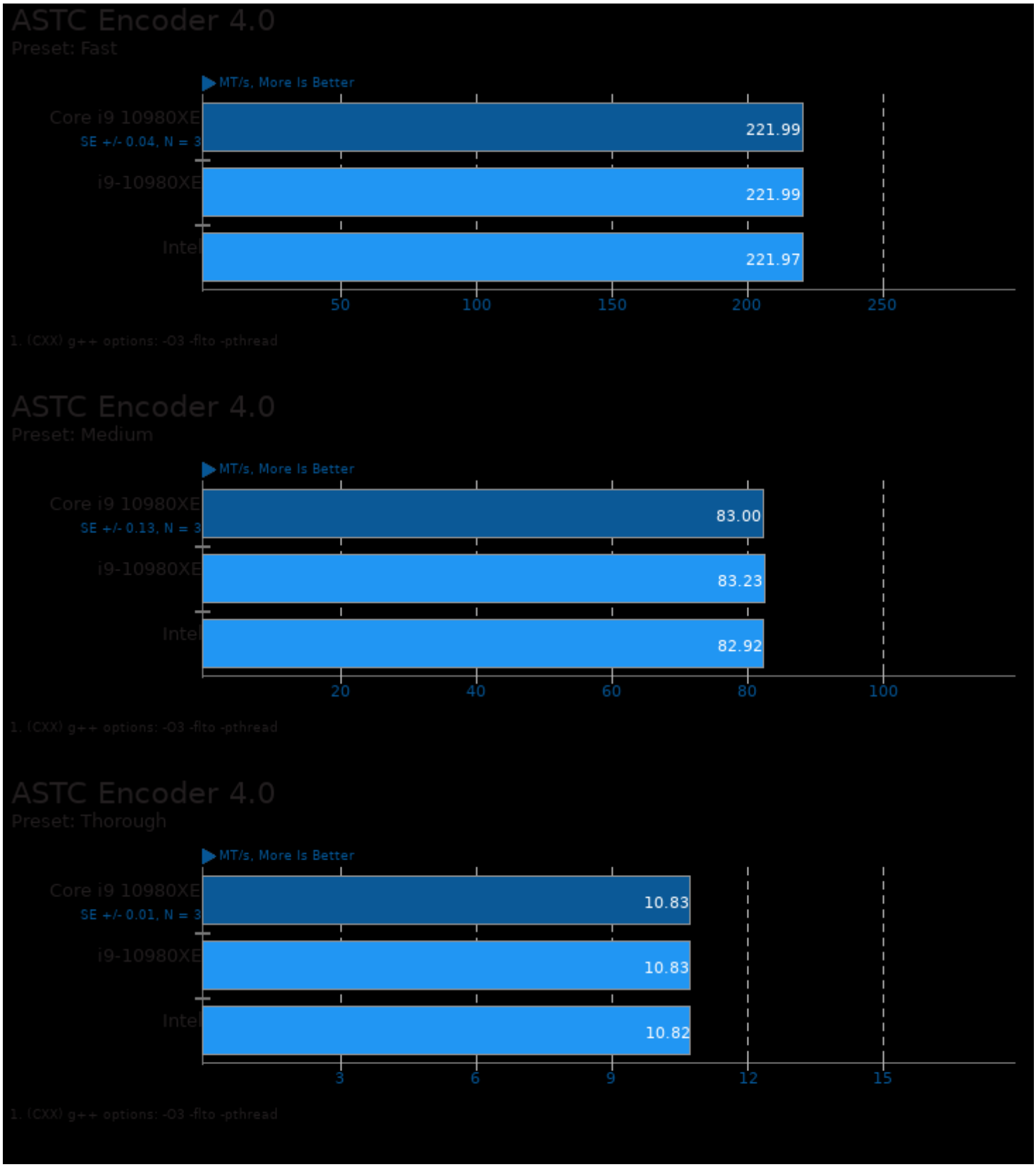
Kernel Notes: Transparent Huge Pages: madvise
Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --enable-cet --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-link-serialization=2 --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-gBFGDP/gcc-11-11.2.0/debian/tmp-gcn/usr --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-build-config=bootstrap-lto-lean --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 schedutil - CPU Microcode: 0x5003302
Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Mitigation of Clear buffers; SMT vulnerable + retbleed: Mitigation of Enhanced IBRS + spec_store_bypass: Mitigation of SSB disabled via prctl + 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

	Core i9 10980XE	i9-10980XE	Intel
LAMMPS Molecular Dynamics Simulator - 20k Atoms (ns/day)	**12.320**	**12.269**	12.276
Normalized	100%	99.59%	99.64%
Standard Deviation	0.1%		
LAMMPS Molecular Dynamics Simulator - Rhodopsin Protein (ns/day)	**11.924**	**11.622**	11.917
Normalized	100%	97.47%	99.94%
Standard Deviation	0.8%		
Aircrack-ng (k/s)	61653	**61654**	**61610**
Normalized	100%	100%	99.93%
Standard Deviation	0%		
ASTC Encoder - Fast (MT/s)	**221.9922**	221.9859	**221.9713**
Normalized	100%	100%	99.99%
Standard Deviation	0%		
ASTC Encoder - Medium (MT/s)	83.0032	**83.2304**	**82.919**
Normalized	99.73%	100%	99.63%
Standard Deviation	0.3%		
ASTC Encoder - Thorough (MT/s)	**10.8282**	10.8273	**10.8229**
Normalized	100%	99.99%	99.95%
Standard Deviation	0.1%		
ASTC Encoder - Exhaustive (MT/s)	**1.0722**	1.0733	**1.0734**
Normalized	99.89%	99.99%	100%
Standard Deviation	0.1%		
GROMACS - MPI CPU - water_GMX50_bare (Ns/Day)	**1.578**	**1.565**	1.57
Normalized	100%	99.18%	99.49%
Standard Deviation	0.2%		

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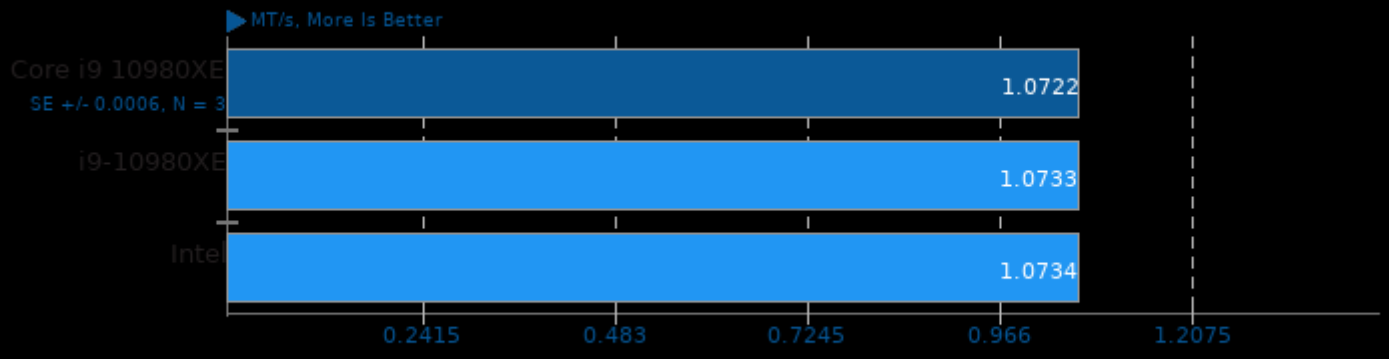
ClickHouse - 1.R.W.A.D.F.R.C.C (Queries/min, Geo Mean)	178.77	**186.06**	**173.66**
Normalized	96.08%	100%	93.34%
Standard Deviation	3%		
ClickHouse - 1.R.W.A.D.S.R (Queries/min, Geo Mean)	183.98	**178.01**	**185.41**
Normalized	99.23%	96.01%	100%
Standard Deviation	2.4%		
ClickHouse - 1.R.W.A.D.T.R (Queries/min, Geo Mean)	**184.09**	184.26	**194.88**
Normalized	94.46%	94.55%	100%
Standard Deviation	3.4%		


LAMMPS Molecular Dynamics Simulator 23Jun2022
Model: 20k Atoms
ns/day, More Is Better
Core i9 10980XE
SE +/- 0.01, N = 3
12.32
i9-10980XE
12.27
Intel
12.28
3
6
9
12
15
1. (CXX) g++ options: -O3 -lm -ldl
LAMMPS Molecular Dynamics Simulator 23Jun2022
Model: Rhodopsin Protein
ns/day, More Is Better
Core i9 10980XE
SE +/- 0.05, N = 3
11.92
i9-10980XE
11.62
Intel
11.92
3
6
9
12
15
1. (CXX) g++ options: -O3 -lm -ldl
Aircrack-ng 1.7
k/s, More Is Better
Core i9 10980XE
SE +/- 13.35, N = 3
61652.54
i9-10980XE
61653.87
Intel
61609.67
13K
26K
39K
52K
65K
1. (CXX) g++ options: -std=gnu++17 -O3 -fvisibility=hidden -fcommon -rdynamic -lnl-3 -lnl-genl-3 -lpcre -lsqlite3 -lpthread -lz -lssl -lcrypto -lhwloc -ldl


ASTC Encoder 4.0
Preset: Fast
MT/s, More Is Better
Core i9 10980XE
SE +/- 0.04, N = 3
i9-10980XE
Intel
221.99
221.99
221.97
50
100
150
200
250
1. (CXX) g++ options: -O3 -flto -pthread
ASTC Encoder 4.0
Preset: Medium
MT/s, More Is Better
Core i9 10980XE
SE +/- 0.13, N = 3
i9-10980XE
Intel
83.00
83.23
82.92
20
40
60
80
100
1. (CXX) g++ options: -O3 -flto -pthread
ASTC Encoder 4.0
Preset: Thorough
MT/s, More Is Better
Core i9 10980XE
SE +/- 0.01, N = 3
i9-10980XE
Intel
10.83
10.83
10.82
3
6
9
12
15
1. (CXX) g++ options: -O3 -flto -pthread

ASTC Encoder 4.0

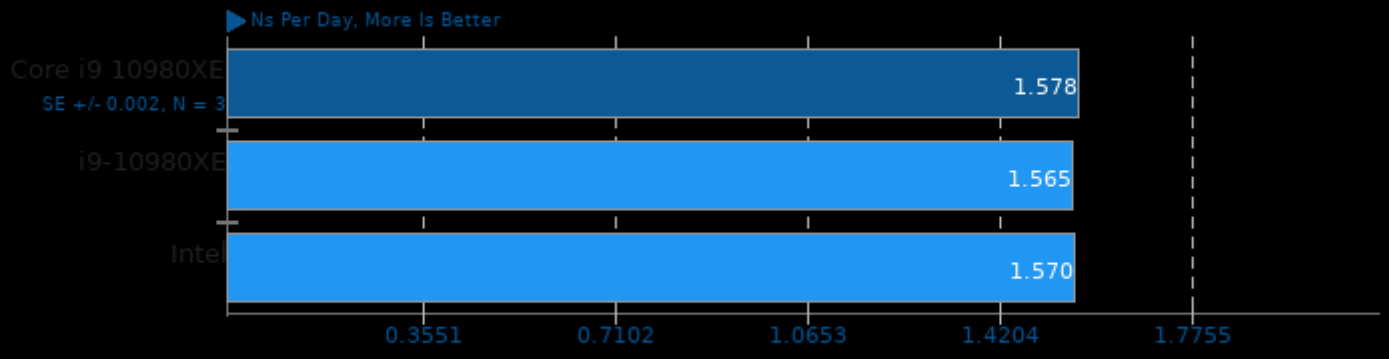
Preset: Exhaustive



1. (CXX) g++ options: -O3 -flto -pthread

GROMACS 2022.1

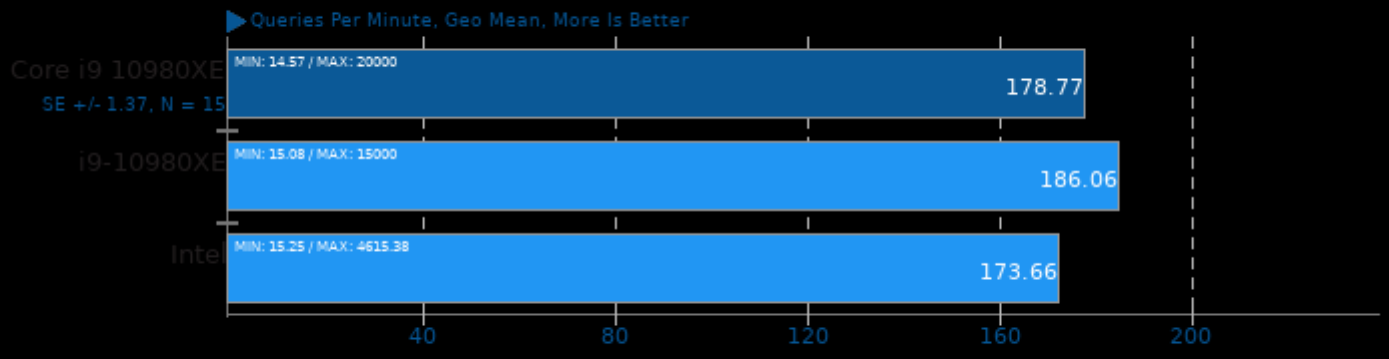
Implementation: MPI CPU - Input: water_GMX50_bare



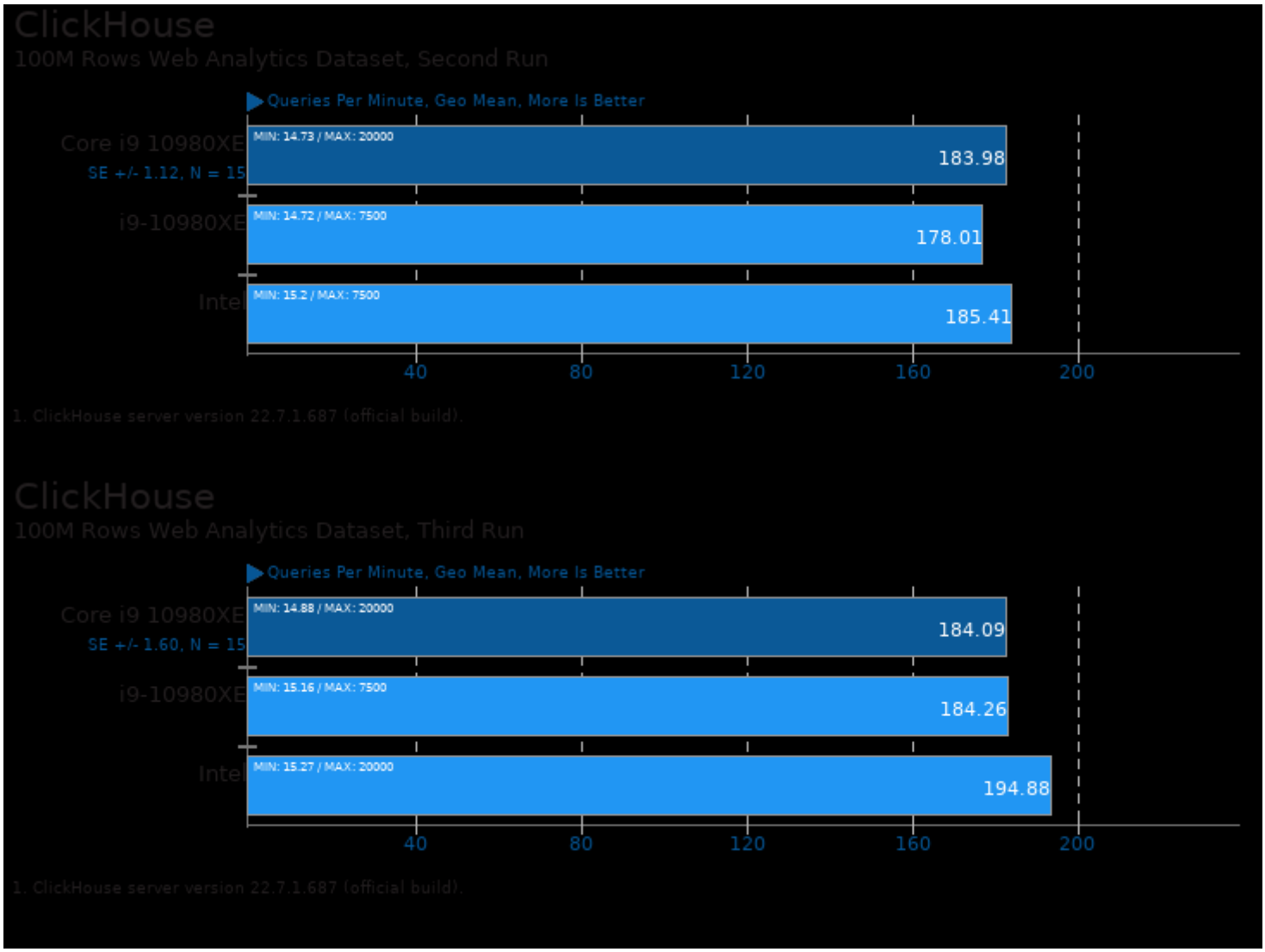
1. (CXX) g++ options: -O3

ClickHouse

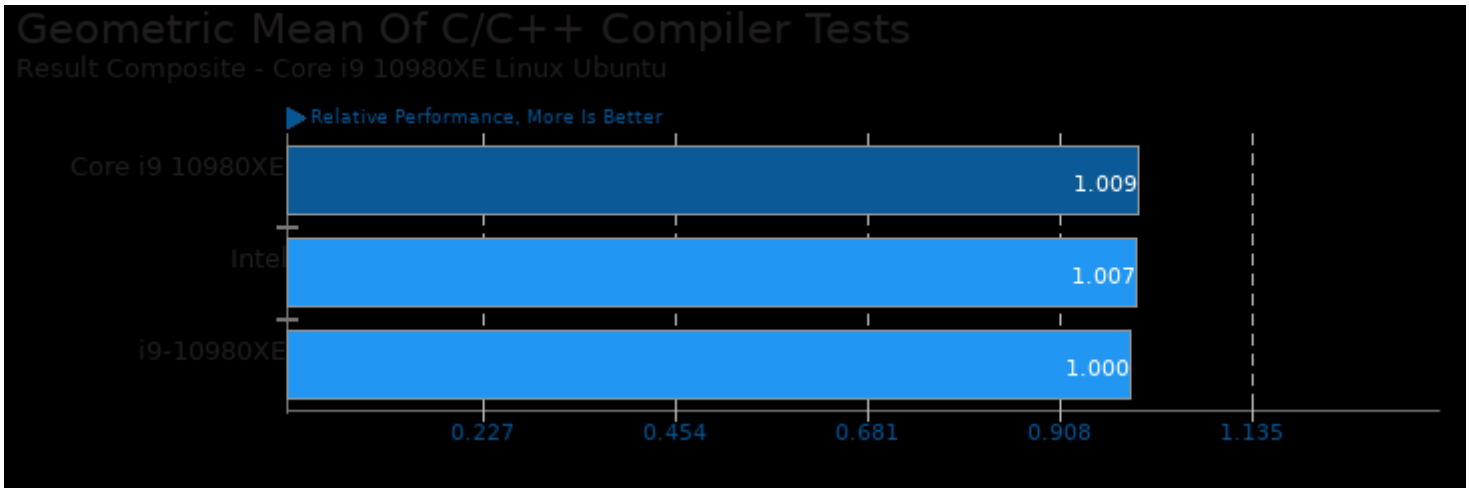
100M Rows Web Analytics Dataset, First Run / Cold Cache



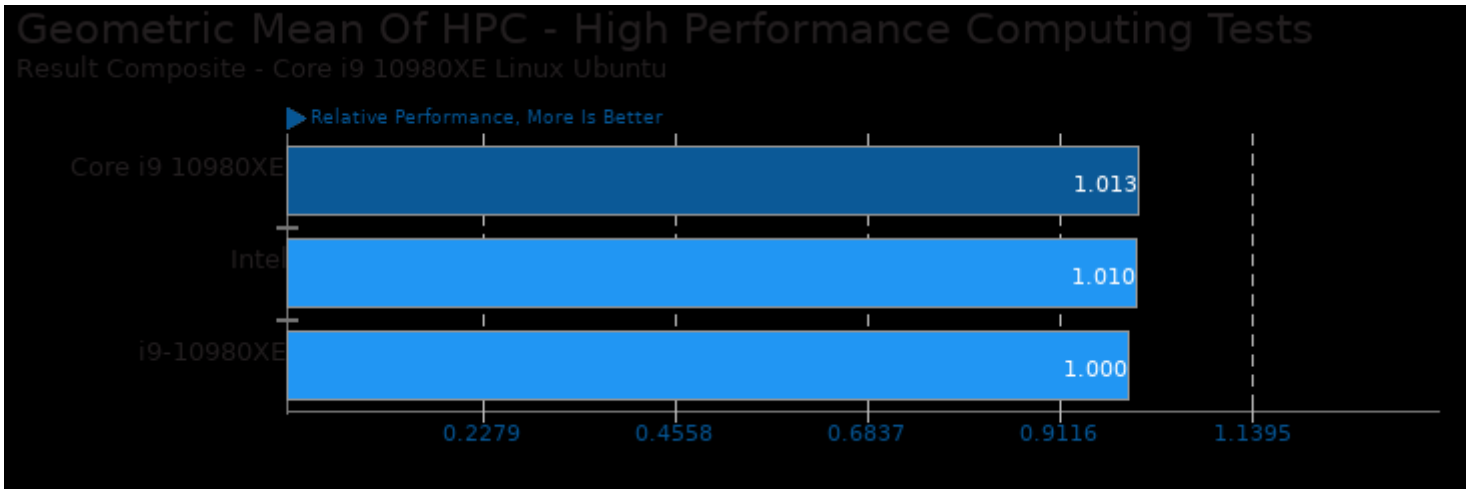
1. ClickHouse server version 22.7.1.687 (official build).


ClickHouse
100M Rows Web Analytics Dataset, Second Run
Queries Per Minute, Geo Mean, More Is Better
Core i9 10980XE
SE +/- 1.12, N = 15
MIN: 14.73 / MAX: 20000
183.98
i9-10980XE
MIN: 14.72 / MAX: 7500
178.01
Intel
MIN: 15.2 / MAX: 7500
185.41
40
80
120
160
200
1. ClickHouse server version 22.7.1.687 (official build).
ClickHouse
100M Rows Web Analytics Dataset, Third Run
Queries Per Minute, Geo Mean, More Is Better
Core i9 10980XE
SE +/- 1.60, N = 15
MIN: 14.88 / MAX: 20000
184.09
i9-10980XE
MIN: 15.16 / MAX: 7500
184.26
Intel
MIN: 15.27 / MAX: 20000
194.88
40
80
120
160
200
1. ClickHouse server version 22.7.1.687 (official build).

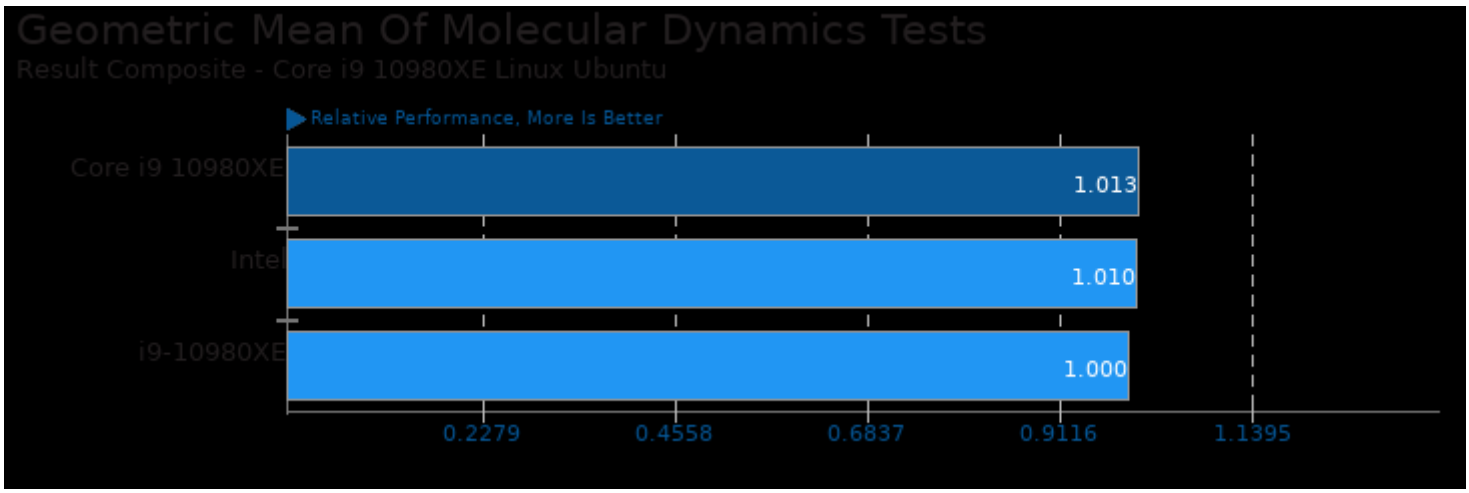
These geometric means are based upon test groupings / test suites for this result file.



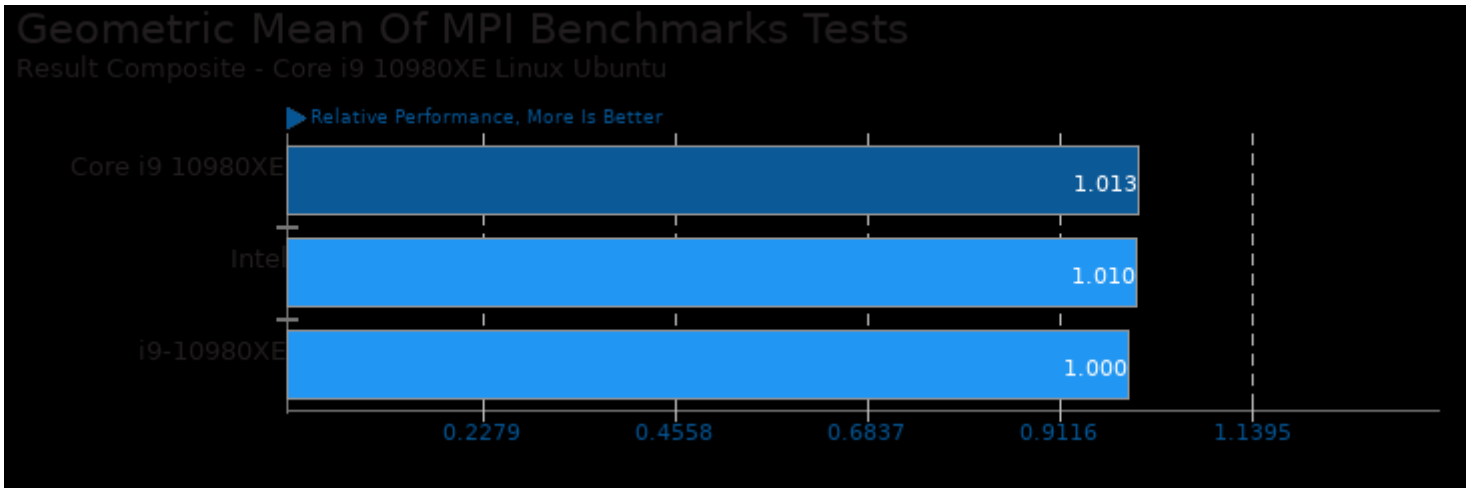
Geometric mean based upon tests: pts/lammps, pts/aircrack-ng and pts/gromacs



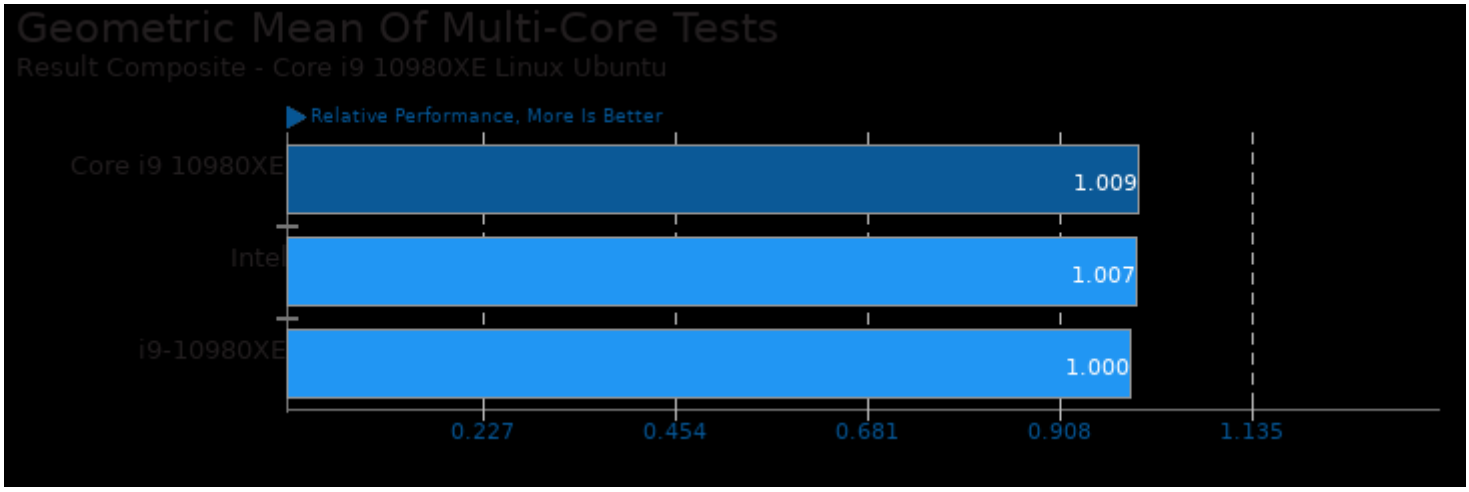
Geometric mean based upon tests: pts/gromacs and pts/lammps



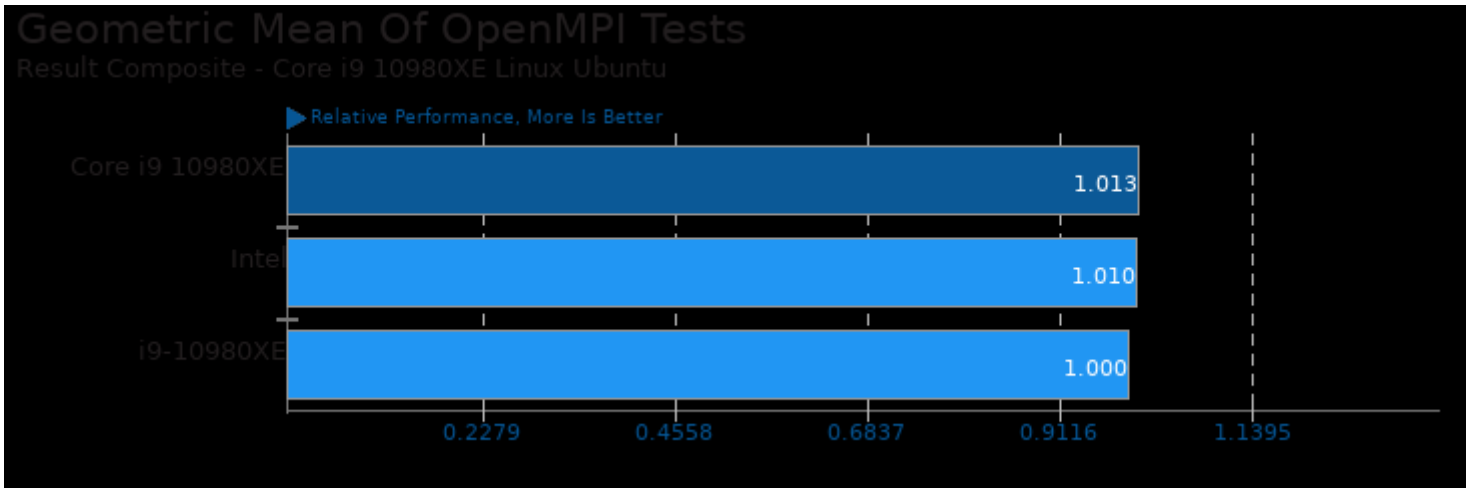
Geometric mean based upon tests: pts/gromacs and pts/lammps



Geometric mean based upon tests: pts/lammps and pts/gromacs

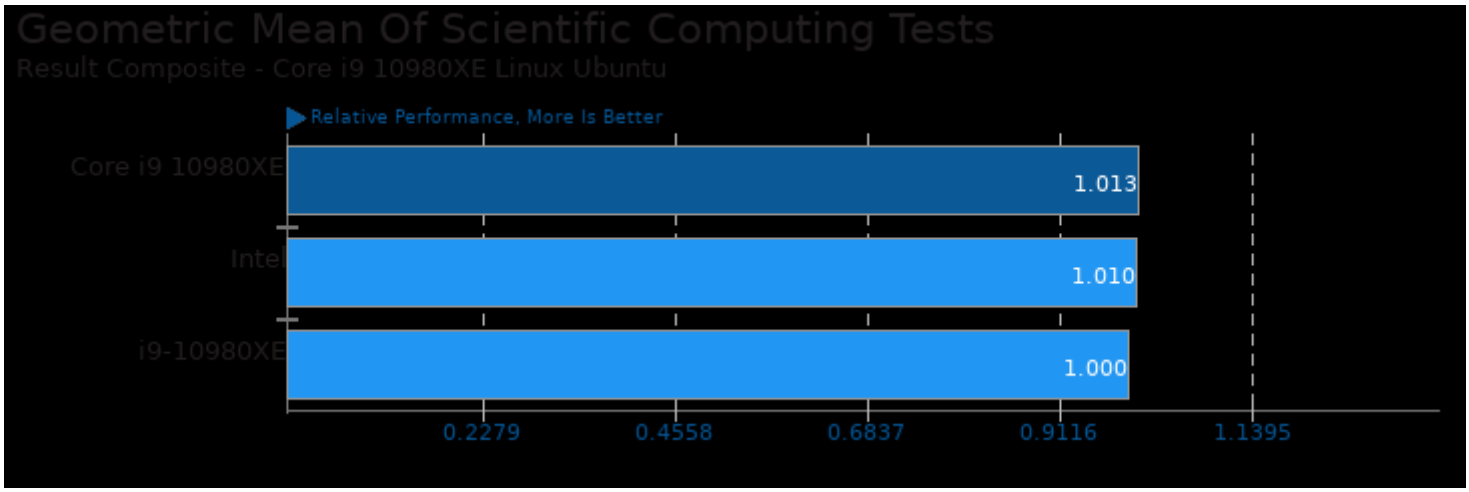


Geometric mean based upon tests: pts/aircrack-ng, pts/lammps and pts/gromacs



Geometric mean based upon tests: pts/lammps and pts/gromacs

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Geometric mean based upon tests: pts/gromacs and pts/lammps

This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 07:08.