



x250, devone-64-workstation

Docker testing on Ubuntu 20.04.4 LTS via the Phoronix Test Suite.

Test Systems:

Thinkpad X250 w upgrades

Intel Core i7-5600U

Processor: Intel Core i7-5600U @ 3.20GHz (2 Cores / 4 Threads), Motherboard: LENOVO 20CM0048US (N10ET53W 1.32 BIOS), Memory: 16GB, Disk: 250GB Samsung SSD 860, Graphics: i915drmfb (950MHz)

OS: Ubuntu 20.04.4 LTS, Kernel: 5.19.8-200.fc36.x86_64 (x86_64), Compiler: GCC 9.4.0, File-System: btrfs, Screen Resolution: 1920x1080, System Layer: Docker

Kernel Notes: Transparent Huge Pages: madvise

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --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-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: 0x2f
 Python Notes: Python 2.7.18 + Python 3.8.10
 Security Notes: itlb_multihit: KVM: Mitigation of VMX disabled + l1tf: Mitigation of PTE Inversion; VMX: conditional cache flushes SMT vulnerable + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI + mmio_stale_data: Unknown: No mitigations + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: conditional RSB filling PBRBS-elBRS: Not affected + srbds: Mitigation of Microcode + tsx_async_abort: Mitigation of Clear buffers; SMT vulnerable

Dev One w 64GB RAM

Processor: AMD Ryzen 7 PRO 5850U @ 4.51GHz (8 Cores / 16 Threads), Motherboard: HP 8A78 (F.05 BIOS), Memory: 64GB, Disk: 1024GB SK hynix PC711 HFS001TDE9X073N, Graphics: amdgpudrmfb (2000/400MHz)

OS: Ubuntu 20.04.4 LTS, Kernel: 5.19.0-76051900-generic (x86_64), Compiler: GCC 9.4.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

Kernel Notes: Transparent Huge Pages: madvise
 Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --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++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --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-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: amd-pstate schedutil (Boost: Enabled) - CPU Microcode: 0xa50000c
 Python Notes: Python 2.7.18 + Python 3.8.10
 Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

HP Dev One with pop_OS stock specs

Processor: AMD Ryzen 7 PRO 5850U @ 4.51GHz (8 Cores / 16 Threads), Motherboard: HP 8A78 (F.04 BIOS), Memory: 16GB, Disk: 1024GB SK hynix PC711 HFS001TDE9X073N, Graphics: amdgpudrmfb (2000/400MHz)

OS: Ubuntu 20.04.4 LTS, Kernel: 5.19.0-76051900-generic (x86_64), Compiler: GCC 9.4.0, File-System: overlayfs, Screen Resolution: 1920x1080, System Layer: Docker

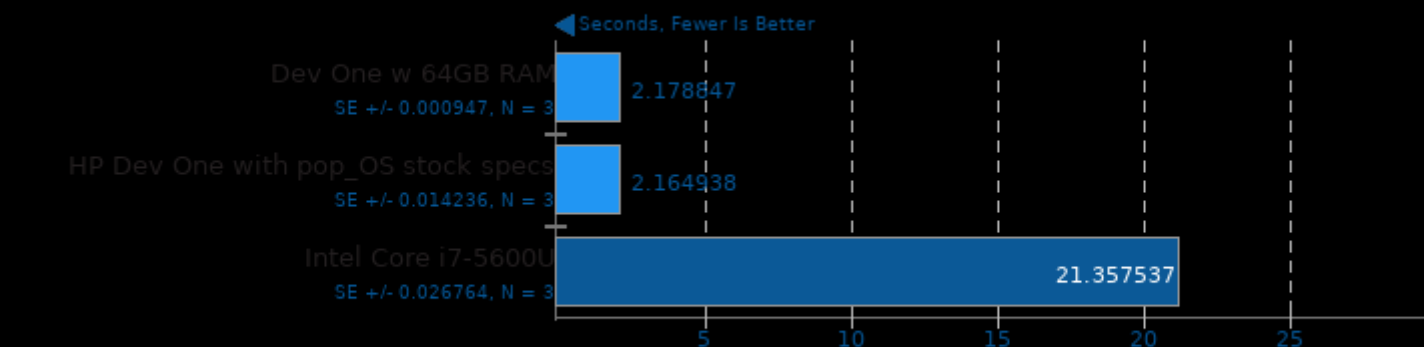
Kernel Notes: Transparent Huge Pages: madvise
 Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none=/build/gcc-9-Av3uEd/gcc-9-9.4.0/debian/tmp-nvptx/usr,hsa --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-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: amd-pstate schedutil (Boost: Enabled) - CPU Microcode: 0xa50000c
 Python Notes: Python 2.7.18 + Python 3.8.10
 Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Retpolines IBPB: conditional IBRS_FW STIBP: always-on RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	Thinkpad X250 w upgrades	Intel Core i7-5600U	Dev One w 64GB RAM	HP Dev One with pop_OS stock specs
Parboil - OpenMP CUTCP (sec)		21.357537	2.178847	2.164938
Normalized		10.14%	99.36%	100%
Standard Deviation		0.2%	0.1%	1.1%
Rodinia - OpenMP LavaMD (sec)		1868	290.545	287.246
Normalized		15.38%	98.86%	100%
Standard Deviation		1.1%	2.3%	1%

Rodinia - OpenMP CFD Solver (sec)	129.291	27.908	26.956
Normalized	20.85%	96.59%	100%
Standard Deviation	2.4%	0%	0.1%
x265 - Bosphorus 4K (FPS)	2.60	10.23	10.39
Normalized	25.02%	98.46%	100%
Standard Deviation	0.2%	1%	2.5%
x265 - Bosphorus 1080p (FPS)	11.28	46.49	47.37
Normalized	23.81%	98.14%	100%
Standard Deviation	1.4%	1.3%	2.5%
Himeno Benchmark - P.P.S (MFLOPS)	2781	4248	4419
Normalized	62.94%	96.13%	100%
Standard Deviation	0.2%	5.2%	5.4%
Swet - Average (Operations/sec)	561930316	899120557	935255453
Normalized	60.08%	96.14%	100%
Standard Deviation	0.3%	1%	0.2%
Sysbench - Memory (MiB/sec)	10729	4041	19160
Normalized	56%	21.09%	100%
Standard Deviation	8.8%	0.2%	0.3%
Sysbench - CPU (Events/sec)	2864	34599	35386
Normalized	8.09%	97.78%	100%
Standard Deviation	2.5%	0.2%	0.4%
Git - T.T.C.C.G.C (sec)	72.270	45.544	44.244
Normalized	61.22%	97.15%	100%
Standard Deviation	0.3%	0.3%	0.4%

Parboil 2.5

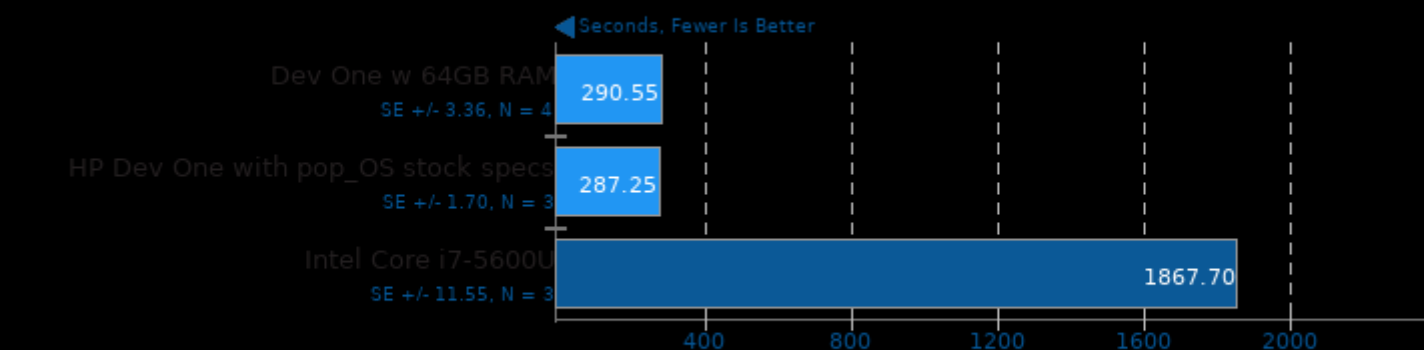
Test: OpenMP CUTCP



1. (CXX) g++ options: -lm -lpthread -lgomp -O3 -ffast-math -fopenmp

Rodinia 3.1

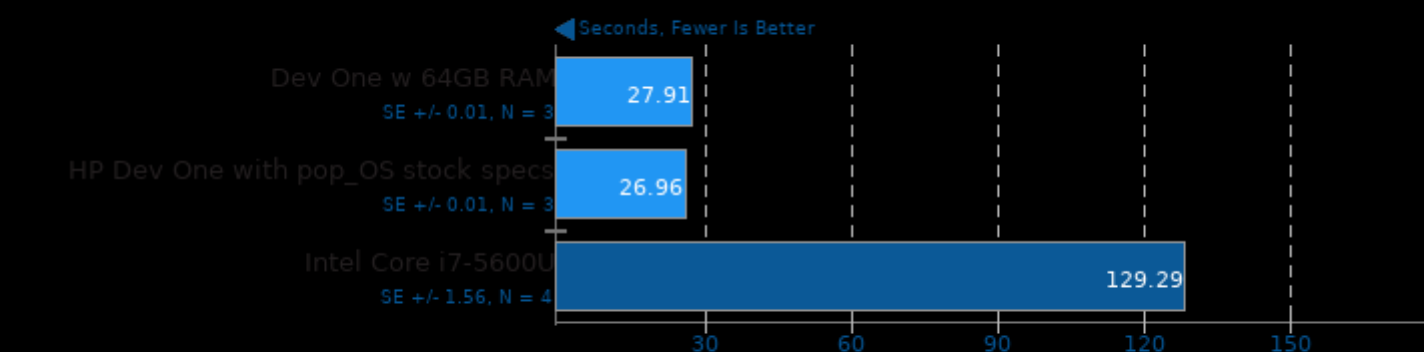
Test: OpenMP LavaMD



1. (CXX) g++ options: -O2 -lOpenCL

Rodinia 3.1

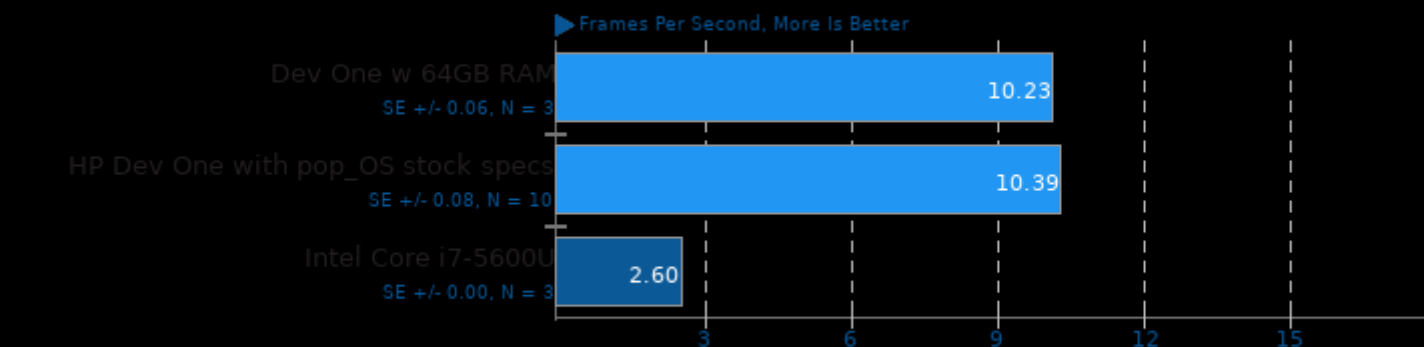
Test: OpenMP CFD Solver



1. (CXX) g++ options: -O2 -lOpenCL

x265 3.4

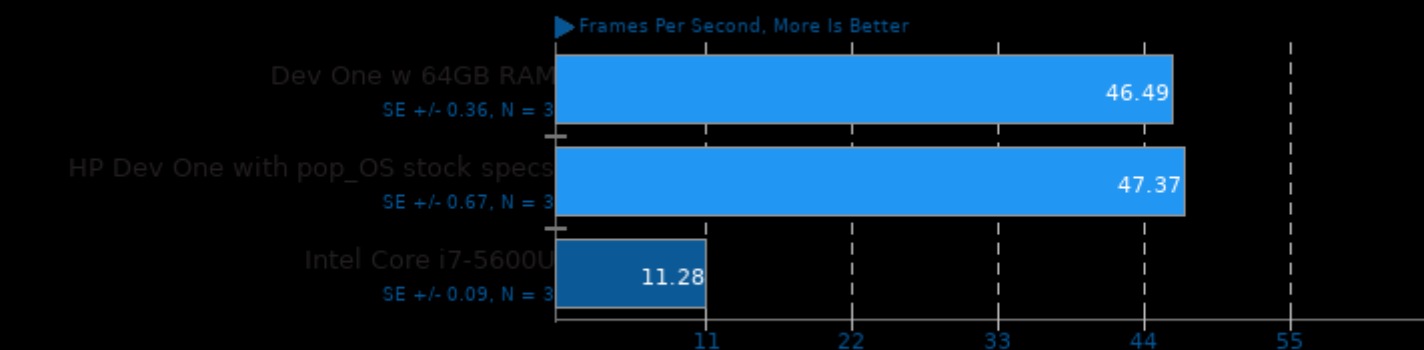
Video Input: Bosphorus 4K



1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

x265 3.4

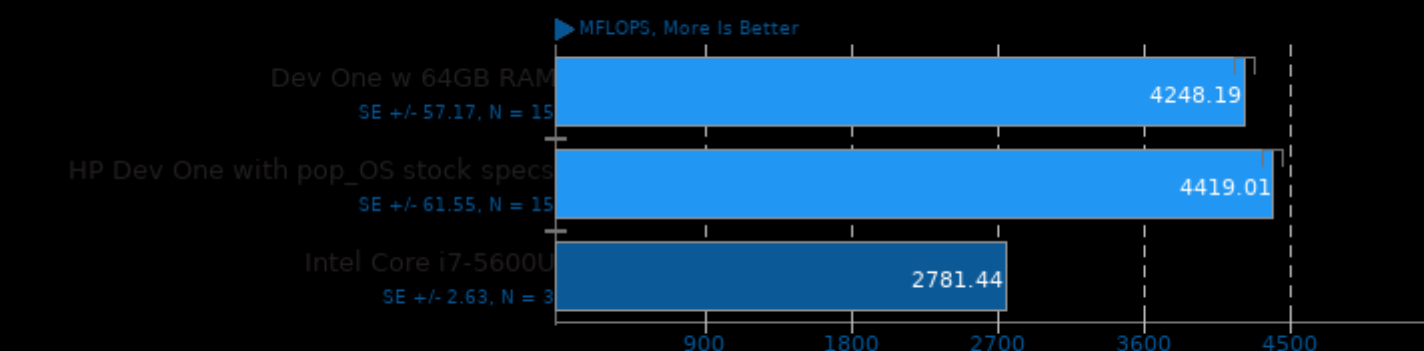
Video Input: Bosphorus 1080p



1. (CXX) g++ options: -O3 -rdynamic -lpthread -lrt -ldl -lnuma

Himeno Benchmark 3.0

Poisson Pressure Solver

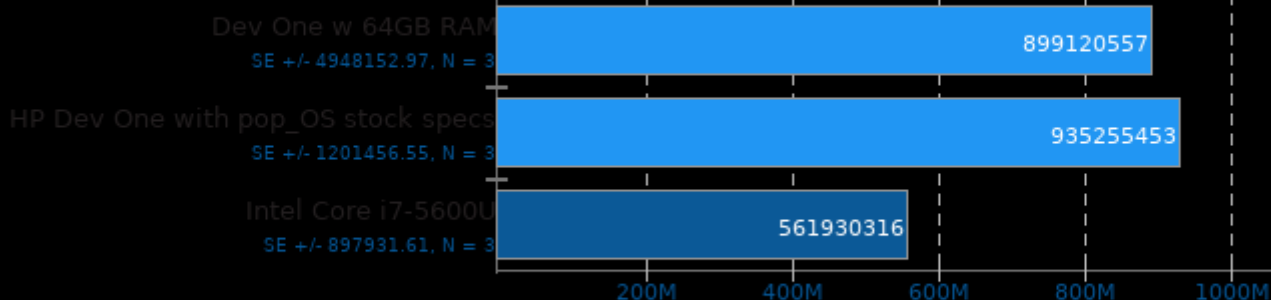


1. (C) gcc options: -O3 -mavx2

Swet 1.5.16

Average

► Operations Per Second, More Is Better

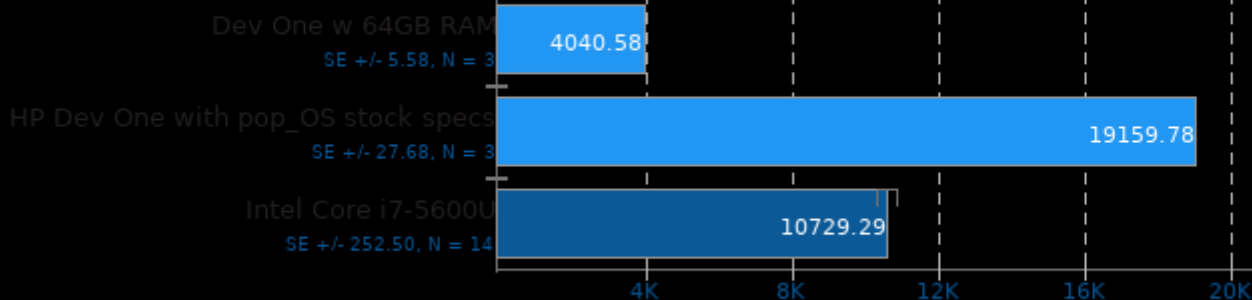


1. (CC) gcc options: -lm -lpthread -lcurses -lrt

Sysbench 1.0.20

Test: Memory

► MiB/sec, More Is Better

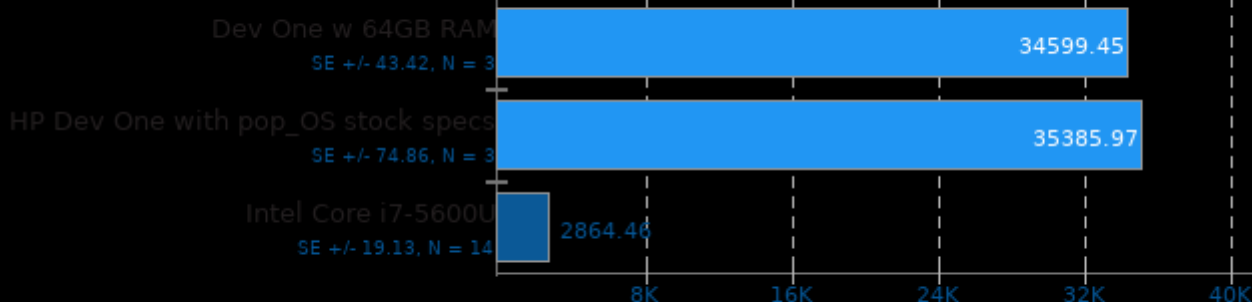


1. (CC) gcc options: -pthread -O2 -funroll-loops -rdynamic -ldl -laio -lm

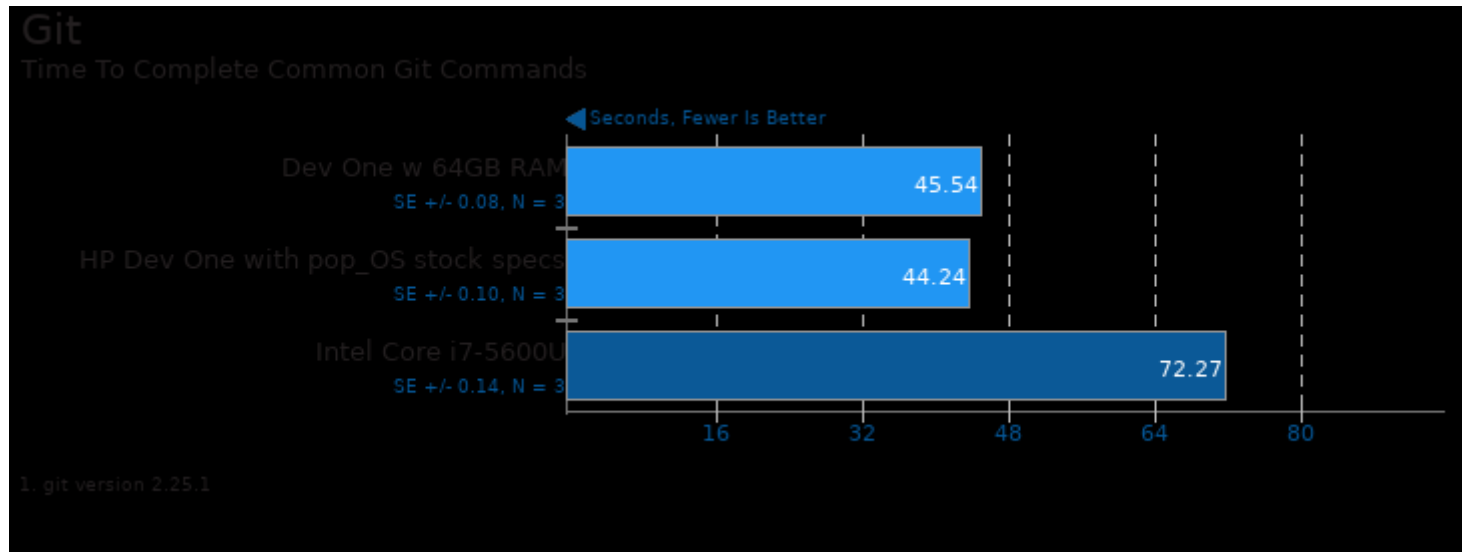
Sysbench 1.0.20

Test: CPU

► Events Per Second, More Is Better



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



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