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# testnewcpu

AMD Ryzen 7 5800X3D 8-Core testing with a Gigabyte X570 AORUS ELITE (F37 BIOS) and ASUS AMD Radeon RX 56/64 8GB on Linuxmint 21.1 via the Phoronix Test Suite.

## Test Systems:

### 3700x

### 3700x-2

Processor: AMD Ryzen 7 3700X 8-Core @ 3.60GHz (8 Cores / 16 Threads), Motherboard: Gigabyte X570 AORUS ELITE (F37 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1024GB ADATA SX8200PNP + 1000GB KINGSTON SA2000M81000G + 2000GB Seagate ST2000DL003-9VT1 + 2000GB Ultra Slim PL, Graphics: ASUS AMD Radeon RX 56/64 8GB (1590/800MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: 27GN950 + LG Ultra HD, Network: Intel I211

OS: Linuxmint 21.1, Kernel: 5.19.0-28-generic (x86_64), Desktop: Cinnamon 5.6.7, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.3.3 kisak-mesa PPA (LLVM 15.0.6 DRM 3.47), Vulkan: 1.3.230, Compiler: GCC 11.3.0,

File-System: ext4, Screen Resolution: 10240x2880

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-xKiWfi/gcc-11-11.3.0/debian/tmp-nvptx/usr,amdgcn-amdhsa=/build/gcc-11-xKiWfi/gcc-11-11.3.0/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: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0x8701021
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + mmio_stale_data: Not affected + retbleed: Mitigation of untrained return thunk; SMT enabled with STIBP protection + 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 STIBP: always-on RSB filling PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

## 5800x3d-2

## 5800x3d-3

## 5800x3d-4

## 5800x3d-5

Processor: AMD Ryzen 7 5800X3D 8-Core @ 3.40GHz (8 Cores / 16 Threads), Motherboard: Gigabyte X570 AORUS ELITE (F37 BIOS), Chipset: AMD Starship/Matisse, Memory: 32GB, Disk: 1024GB ADATA SX8200PNP + 1000GB KINGSTON SA2000M81000G + 2000GB Seagate ST2000DL003-9VT1, Graphics: ASUS AMD Radeon RX 56/64 8GB (1590/800MHz), Audio: AMD Vega 10 HDMI Audio, Monitor: 27GN950 + LG Ultra HD, Network: Intel I211

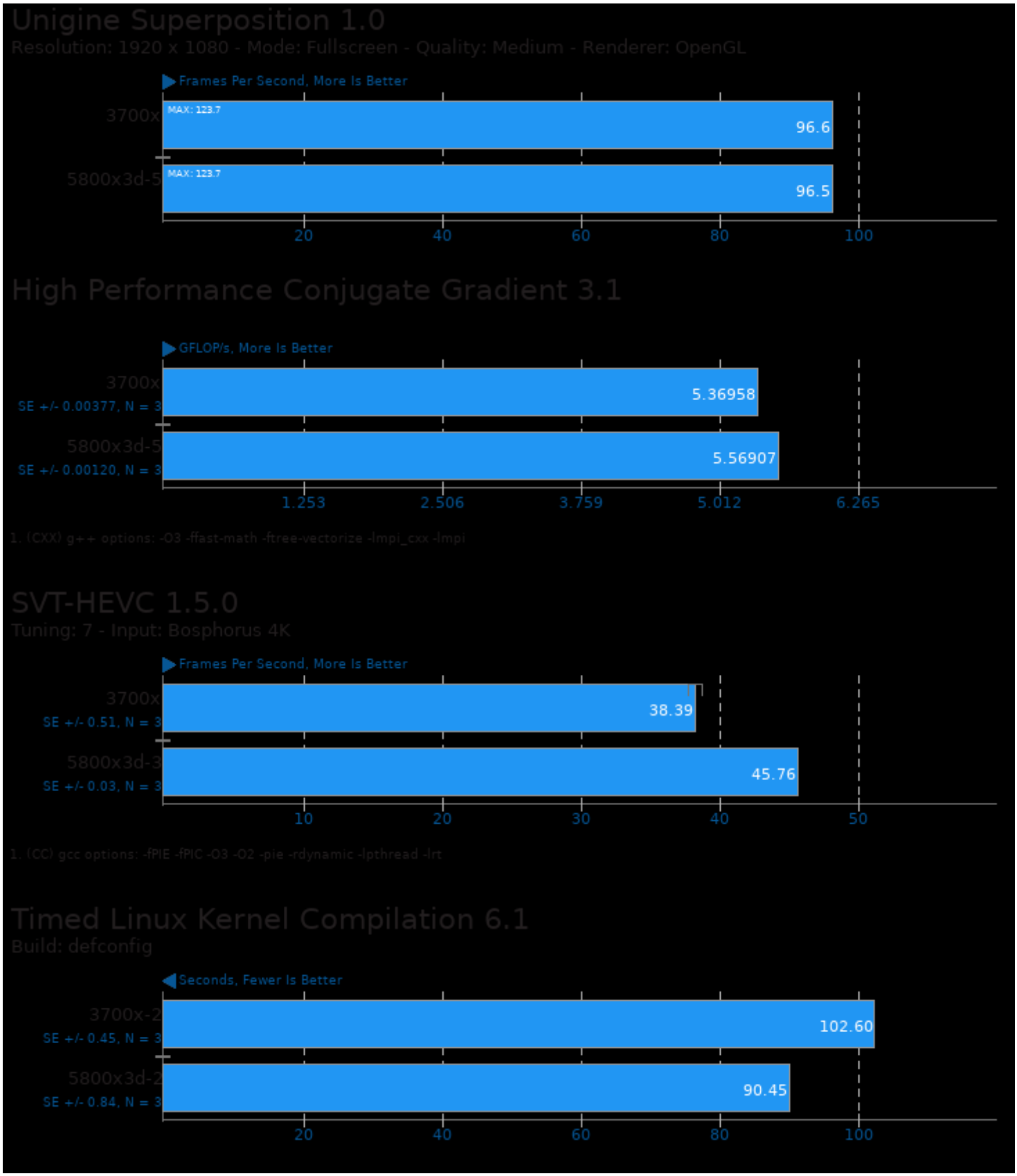
OS: Linuxmint 21.1, Kernel: 5.19.0-28-generic (x86_64), Desktop: Cinnamon 5.6.7, Display Server: X Server 1.21.1.3, OpenGL: 4.6 Mesa 22.3.3 kisak-mesa PPA (LLVM 15.0.6 DRM 3.47), Vulkan: 1.3.230, Compiler: GCC 11.3.0, File-System: ext4, Screen Resolution: 10240x2880

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Processor Notes: Scaling Governor: acpi-cpufreq schedutil (Boost: Enabled) - CPU Microcode: 0xa20120a
Graphics Notes: GLAMOR - BAR1 / Visible vRAM Size: 256 MB - vBIOS Version: 115-D050PIL-100
Python Notes: Python 3.10.6
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 PBRSB-eIBRS: Not affected + srbds: Not affected + tsx_async_abort: Not affected

| | 3700x | 3700x-2 | 5800x3d-2 | 5800x3d-3 | 5800x3d-4 | 5800x3d-5 |
|---|---|---|---|---|---|---|
| **Unigine Superposition - 1920 x 1080 - Fullscreen - Medium - OpenGL (FPS)** | 96.6 | | | | | 96.5 |
| **Normalized** | 100% | | | | | 99.9% |

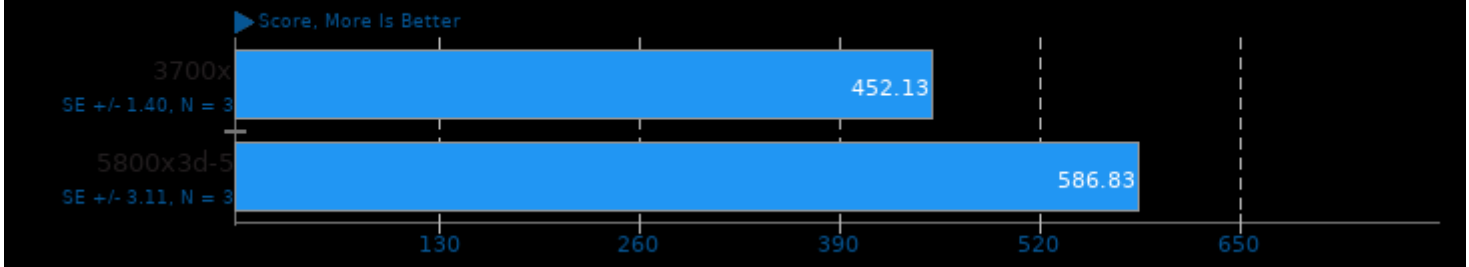
# testnewcpu

| | | | | | | |
|---|---|---|---|---|---|---|
| **High Performance Conjugate Gradient (GFLOP/s)** | **5.36958** | | | | | **5.56907** |
| **Normalized** | 96.42% | | | | | 100% |
| **Standard Deviation** | 0.1% | | | | | 0% |
| **SVT-HEVC - 7 - Bosphorus 4K (FPS)** | **38.39** | | | **45.76** | | |
| **Normalized** | 83.89% | | | 100% | | |
| **Standard Deviation** | 2.3% | | | 0.1% | | |
| **Timed Linux Kernel Compilation - defconfig (sec)** | | **102.596** | **90.451** | | | |
| **Normalized** | | 88.16% | 100% | | | |
| **Standard Deviation** | | 0.8% | 1.6% | | | |
| **Numpy Benchmark (Score)** | **452.13** | | | | | **586.83** |
| **Normalized** | 77.05% | | | | | 100% |
| **Standard Deviation** | 0.5% | | | | | 0.9% |
| **XZ Compression - C.u.1.0.3.s.i.i.C.L.9 (sec)** | **27.799** | | | | | **24.367** |
| **Normalized** | 87.65% | | | | | 100% |
| **Standard Deviation** | 0.2% | | | | | 0.5% |
| **LAME MP3 Encoding - WAV To MP3 (sec)** | **7.345** | | | **6.212** | | |
| **Normalized** | 84.57% | | | 100% | | |
| **Standard Deviation** | 0.4% | | | 1.4% | | |
| **m-queens - Time To Solve (sec)** | **68.000** | | | | **61.034** | |
| **Normalized** | 89.76% | | | | 100% | |
| **Standard Deviation** | 0.1% | | | | 0.1% | |
| **GnuPG - L.4.3.P.F.E (sec)** | **11.625** | | | | **10.657** | |
| **Normalized** | 91.67% | | | | 100% | |
| **Standard Deviation** | 3.1% | | | | 2.8% | |


Unigine Superposition 1.0
Resolution: 1920 x 1080 - Mode: Fullscreen - Quality: Medium - Renderer: OpenGL
Frames Per Second, More Is Better
3700x
MAX: 123.7
96.6
5800x3d-5
MAX: 123.7
96.5
20
40
60
80
100
High Performance Conjugate Gradient 3.1
GFLOP/s, More Is Better
3700x
SE +/- 0.00377, N = 3
5.36958
5800x3d-5
SE +/- 0.00120, N = 3
5.56907
1.253
2.506
3.759
5.012
6.265
1. (CXX) g++ options: -O3 -ffast-math -ftree-vectorize -lmpi_cxx -lmpi
SVT-HEVC 1.5.0
Tuning: 7 - Input: Bosphorus 4K
Frames Per Second, More Is Better
3700x
SE +/- 0.51, N = 3
38.39
5800x3d-3
SE +/- 0.03, N = 3
45.76
10
20
30
40
50
1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lpthread -lrt
Timed Linux Kernel Compilation 6.1
Build: defconfig
Seconds, Fewer Is Better
3700x-2
SE +/- 0.45, N = 3
102.60
5800x3d-2
SE +/- 0.84, N = 3
90.45
20
40
60
80
100

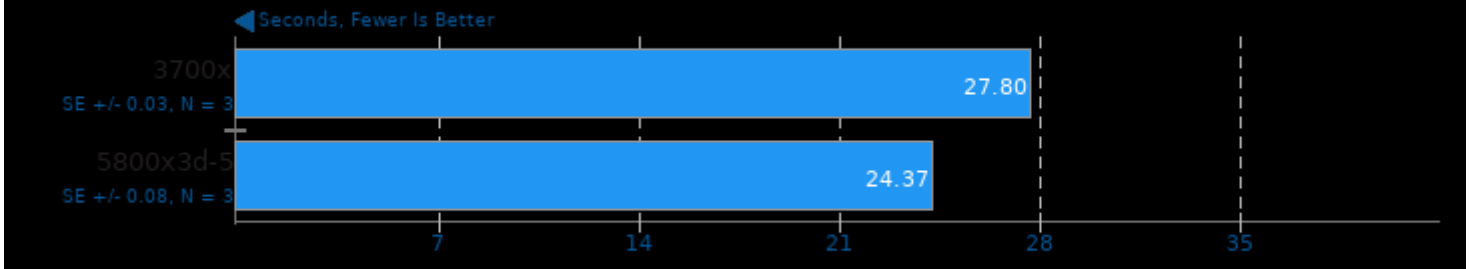
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## Numpy Benchmark




## XZ Compression 5.2.4

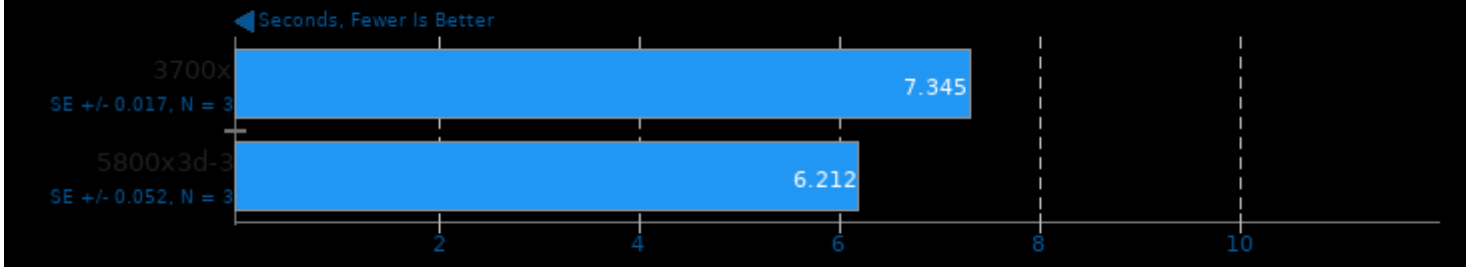
Compressing ubuntu-16.04.3-server-i386.img, Compression Level 9




1. (CC) gcc options: -fvisibility=hidden -O2

## LAME MP3 Encoding 3.100

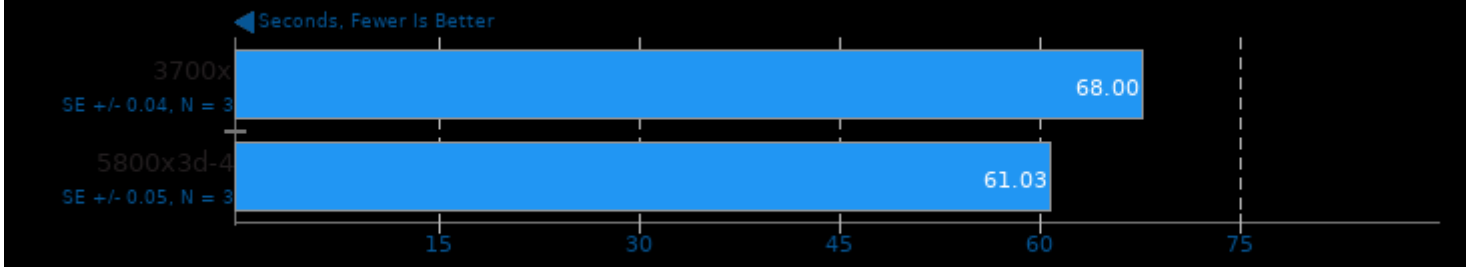
WAV To MP3



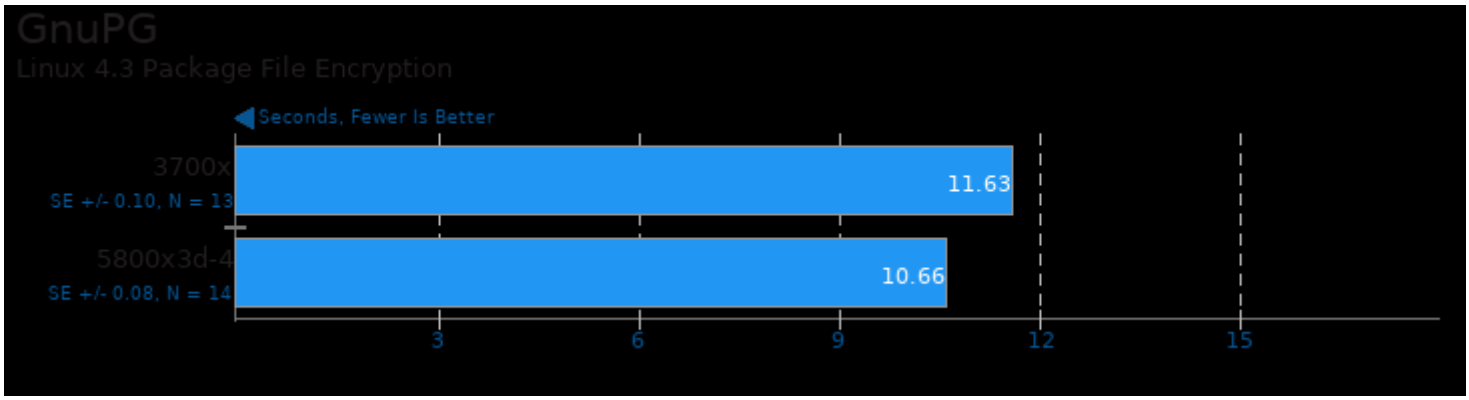

1. (CC) gcc options: -O3 -ffast-math -funroll-loops -fschedule-insns2 -fbranch-count-reg -fforce-addr -pipe -lncurses -lm

## m-queens 1.2

Time To Solve




1. (CXX) g++ options: -fopenmp -O2 -march=native




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