



## Intel Core i7 4960X On Ubuntu Linux

Intel Core i7-4960X testing with a MSI X79MA-GD45 (MS-7738) v1.0 (V3.8 BIOS) and AMD FirePro V4800 1GB on Ubuntu 19.10 via the Phoronix Test Suite.

### Test Systems:

#### Core i7 4960X

Processor: Intel Core i7-4960X @ 4.00GHz (6 Cores / 12 Threads), Motherboard: MSI X79MA-GD45 (MS-7738) v1.0 (V3.8 BIOS), Chipset: Intel Xeon E7 v2/Xeon, Memory: 8GB, Disk: VisionTek 240GB, Graphics: AMD FirePro V4800 1GB, Audio: Realtek ALC892, Monitor: DELL S2409W, Network: Realtek RTL8111/8168/8411

OS: Ubuntu 19.10, Kernel: 5.3.0-40-generic (x86\_64), Desktop: GNOME Shell 3.34.1, Display Server: X Server 1.20.5, Display Driver: modesetting 1.20.5, OpenGL: 3.3 Mesa 19.2.8 (LLVM 9.0.0), Compiler: GCC 9.2.1 20191008, File-System: zfs, Screen Resolution: 1920x1080

Compiler Notes: --build=x86\_64-linux-gnu --disable-vtable-verify --disable-werror --enable-bootstrap --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-offload-targets=nvptx-none,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_pstate powersave - CPU Microcode: 0x42e
Python Notes: Python 2.7.17 + Python 3.7.5
Security Notes: itlb_multihit: KVM: Vulnerable + I1tf: Mitigation of PTE Inversion + mds: Mitigation of Clear buffers; SMT vulnerable + meltdown: Mitigation of PTI +
spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swaggs barriers and __user pointer sanitization + spectre_v2:
Mitigation of Full generic retpoline IBPB: conditional IBRS_FW STIBP: conditional RSB filling + tsx_async_abort: Not affected
```

## Core i7 4960X

<b>SVT-AV1 - Enc Mode 0 - 1080p (FPS)</b>	0.01
Standard Deviation	0%
<b>Blender - Pabellon Barcelona - OpenCL (sec)</b>	1732
Standard Deviation	1.5%
<b>Timed GCC Compilation - Time To Compile (sec)</b>	1520
Standard Deviation	0.3%
<b>Blender - Pabellon Barcelona - CPU-Only (sec)</b>	1369
Standard Deviation	0.7%
<b>Blender - Fishy Cat - OpenCL (sec)</b>	1294
Standard Deviation	1.8%
<b>Blender - Classroom - OpenCL (sec)</b>	1223
Standard Deviation	0.4%
<b>Blender - Classroom - CPU-Only (sec)</b>	1131
Standard Deviation	1%
<b>Appleseed - Emily (sec)</b>	899.785353
<b>libgav1 - C.1.1.b (FPS)</b>	15.53
Standard Deviation	0.2%
<b>Blender - Fishy Cat - CPU-Only (sec)</b>	565.56
Standard Deviation	0.2%
<b>Blender - BMW27 - OpenCL (sec)</b>	533.75
Standard Deviation	2.8%
<b>SVT-AV1 - Enc Mode 4 - 1080p (FPS)</b>	0.164
Standard Deviation	0%
<b>libgav1 - Summer Nature 4K (FPS)</b>	19.71
Standard Deviation	38.3%
<b>Appleseed - Disney Material (sec)</b>	620.390902
<b>OSPray - San Miguel - Path Tracer (FPS)</b>	0.59
Standard Deviation	0.2%
<b>Blender - BMW27 - CPU-Only (sec)</b>	376.77
Standard Deviation	1%
<b>SVT-AV1 - Enc Mode 8 - 1080p (FPS)</b>	0.870
Standard Deviation	0.1%
<b>Appleseed - Material Tester (sec)</b>	519.023282
<b>OSPray - XFrog Forest - Path Tracer (FPS)</b>	0.66
Standard Deviation	0.2%
<b>libgav1 - S.N.1 (FPS)</b>	62.02
Standard Deviation	22.6%
<b>dav1d - C.1.1.b (FPS)</b>	30.002917
Standard Deviation	0.1%
<b>Radiance Benchmark - Serial (sec)</b>	892.827
<b>Timed LLVM Compilation - Time To Compile (sec)</b>	815.273

<b>libgav1 - Chimera 1080p (FPS)</b>	37.55
Standard Deviation	1.5%
<b>SVT-HEVC - 1.8.b.Y.T.H.V.E (FPS)</b>	2.54
Standard Deviation	0%
<b>Build2 - Time To Compile (sec)</b>	204.208
Standard Deviation	0.7%
<b>Tachyon - Total Time (sec)</b>	195.2282
Standard Deviation	0.1%
<b>OSPray - XFrog Forest - SciVis (FPS)</b>	1.20
Standard Deviation	0.1%
<b>AOM AV1 - Speed 4 Realtime (FPS)</b>	0.34
Standard Deviation	0%
<b>Timed GDB GNU Debugger Compilation - Time To Compile (sec)</b>	176.653
Standard Deviation	0.1%
<b>C-Ray - Total Time - 4.1.R.P.P (sec)</b>	161.840
Standard Deviation	0.1%
<b>Timed Linux Kernel Compilation - Time To Compile (sec)</b>	161.209
Standard Deviation	0.9%
<b>VP9 libvpx Encoding - Speed 0 (FPS)</b>	4.24
Standard Deviation	0.1%
<b>Embree - Pathtracer - Asian Dragon Obj (FPS)</b>	5.9034
Standard Deviation	0.4%
<b>OSPray - NASA Streamlines - Path Tracer (FPS)</b>	1.91
Standard Deviation	0.1%
<b>Embree - Pathtracer ISPC - Asian Dragon Obj (FPS)</b>	6.5235
Standard Deviation	0.1%
<b>Embree - Pathtracer - Crown (FPS)</b>	5.5035
Standard Deviation	0.1%
<b>OSPray - San Miguel - SciVis (FPS)</b>	6.57
Standard Deviation	0.3%
<b>AOM AV1 - Speed 0 Two-Pass (FPS)</b>	0.09
Standard Deviation	0%
<b>Timed FFmpeg Compilation - Time To Compile (sec)</b>	106.371
Standard Deviation	0.4%
<b>POV-Ray - Trace Time (sec)</b>	102.773
Standard Deviation	0.4%
<b>Embree - Pathtracer ISPC - Crown (FPS)</b>	5.9302
Standard Deviation	0%
<b>OSPray - NASA Streamlines - SciVis (FPS)</b>	9.52
Standard Deviation	0%
<b>Timed PHP Compilation - Time To Compile (sec)</b>	99.804
Standard Deviation	0.1%
<b>Radiance Benchmark - SMP Parallel (sec)</b>	281.986
<b>Embree - Pathtracer - Asian Dragon (FPS)</b>	6.5646
Standard Deviation	0.3%
<b>AOM AV1 - Speed 2 Two-Pass (FPS)</b>	0.22
Standard Deviation	2.6%
<b>Embree - Pathtracer ISPC - Asian Dragon (FPS)</b>	7.5159
Standard Deviation	0.2%
<b>Chaos Group V-RAY - CPU (Ksamples)</b>	5946
Standard Deviation	0.2%
<b>Timed MPlayer Compilation - Time To Compile (sec)</b>	71.698
Standard Deviation	0%

<b>x264 - H.2.V.E (FPS)</b>	44.39
Standard Deviation	6.8%
<b>AOM AV1 - Speed 6 Realtime (FPS)</b>	9.49
Standard Deviation	0.2%
<b>IndigoBench - Bedroom (M samples/s)</b>	0.712
Standard Deviation	0.2%
<b>LuxCoreRender - DLSC (M samples/sec)</b>	68754
Standard Deviation	0%
<b>LuxCoreRender - R.C.a.P (M samples/sec)</b>	3918
Standard Deviation	0%
<b>IndigoBench - Supercar (M samples/s)</b>	1.540
Standard Deviation	0.4%
<b>AOM AV1 - Speed 5 Two-Pass (FPS)</b>	0.72
Standard Deviation	0.8%
<b>Timed ImageMagick Compilation - Time To Compile (sec)</b>	55.025
Standard Deviation	0.3%
<b>dav1d - Summer Nature 4K (FPS)</b>	66.238333
Standard Deviation	0.1%
<b>Tungsten Renderer - Hair (sec)</b>	51.6372
Standard Deviation	0.1%
<b>TTSIOD 3D Renderer - P.R.W.S.S.M (FPS)</b>	255.054
Standard Deviation	0.1%
<b>OSPray - M.R - SciVis (FPS)</b>	6.30
Standard Deviation	0.3%
<b>dav1d - Chimera 1080p (FPS)</b>	197.00500
Standard Deviation	0.1%
<b>Tungsten Renderer - Water Caustic (sec)</b>	41.7103
Standard Deviation	0.2%
<b>VP9 libvpx Encoding - Speed 5 (FPS)</b>	15.79
Standard Deviation	0.2%
<b>Intel Open Image Denoise - Memorial (Images / Sec)</b>	2.49
Standard Deviation	0.3%
<b>AOBench - 2048 x 2048 - Total Time (sec)</b>	38.101
Standard Deviation	0.2%
<b>Timed Apache Compilation - Time To Compile (sec)</b>	33.359
Standard Deviation	0.2%
<b>x265 - H.2.1.V.E (FPS)</b>	25.36
Standard Deviation	0.2%
<b>AOM AV1 - Speed 8 Realtime (FPS)</b>	30.79
Standard Deviation	1.4%
<b>Smallpt - G.I.R.1.S (sec)</b>	22.036
Standard Deviation	0.2%
<b>FLAC Audio Encoding - WAV To FLAC (sec)</b>	11.789
Standard Deviation	0.7%
<b>Tungsten Renderer - Volumetric Caustic (sec)</b>	18.3382
Standard Deviation	0.2%
<b>dav1d - S.N.1 (FPS)</b>	248.673542
Standard Deviation	0%
<b>Tungsten Renderer - Non-Exponential (sec)</b>	13.6114
Standard Deviation	0.1%
<b>LAME MP3 Encoding - WAV To MP3 (sec)</b>	10.100
Standard Deviation	0.4%
<b>Ogg Encoding - WAV To Ogg (sec)</b>	7.064

Standard Deviation 0.5%  
**FFmpeg - H.2.H.T.N.D (sec) 6.263**  
Standard Deviation 1.3%

## SVT-AV1 0.8

Encoder Mode: Enc Mode 0 - Input: 1080p

▶ Frames Per Second, More Is Better

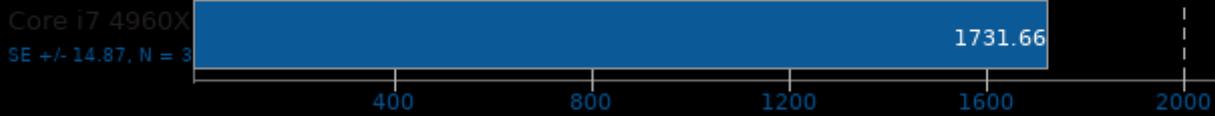


1. (CXX) g++ options: -fPIE -fPIC -pie

## Blender 2.82

Blend File: Pabellon Barcelona - Compute: OpenCL

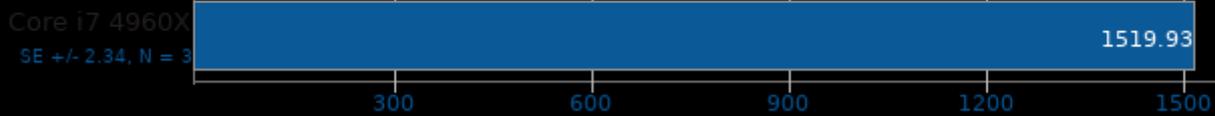
◀ Seconds, Fewer Is Better



## Timed GCC Compilation 8.2

Time To Compile

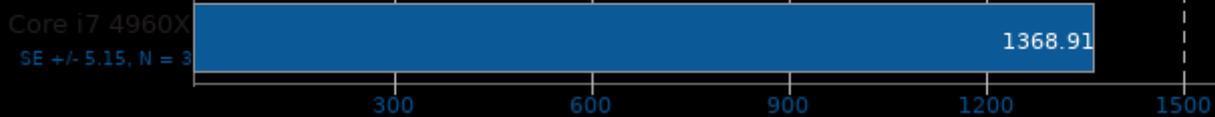
◀ Seconds, Fewer Is Better



## Blender 2.82

Blend File: Pabellon Barcelona - Compute: CPU-Only

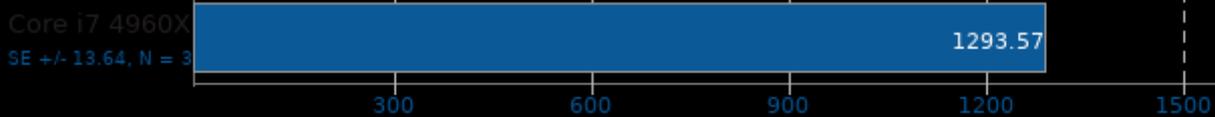
◀ Seconds, Fewer Is Better



## Blender 2.82

Blend File: Fishy Cat - Compute: OpenCL

◀ Seconds, Fewer Is Better



## Blender 2.82

Blend File: Classroom - Compute: OpenCL

◀ Seconds, Fewer Is Better



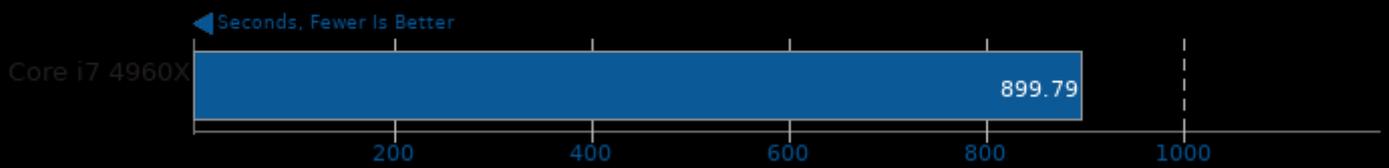
## Blender 2.82

Blend File: Classroom - Compute: CPU-Only



## Appleseed 2.0 Beta

Scene: Emily



## libgav1 2019-10-05

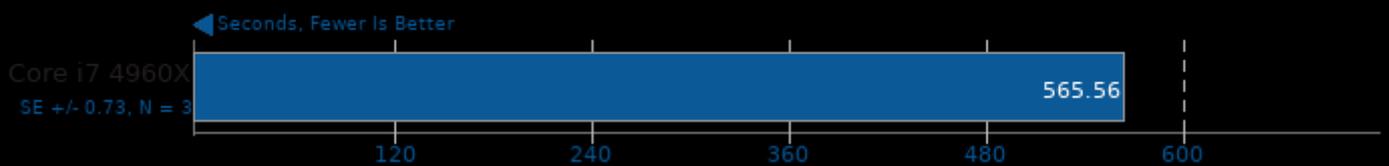
Video Input: Chimera 1080p 10-bit



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

## Blender 2.82

Blend File: Fishy Cat - Compute: CPU-Only



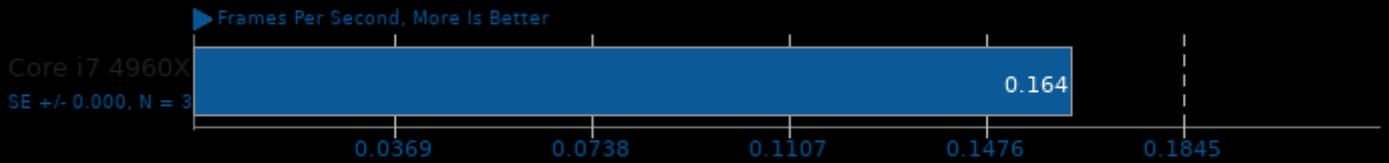
## Blender 2.82

Blend File: BMW27 - Compute: OpenCL



## SVT-AV1 0.8

Encoder Mode: Enc Mode 4 - Input: 1080p



1, (CXX) g++ options: -fPIE -fPIC -pie

## libgav1 2019-10-05

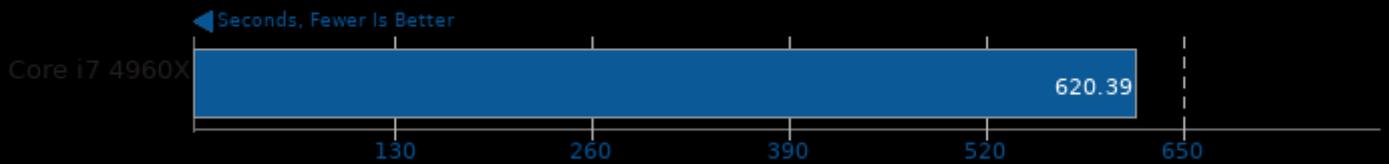
Video Input: Summer Nature 4K



1, (CXX) g++ options: -O3 -pthread

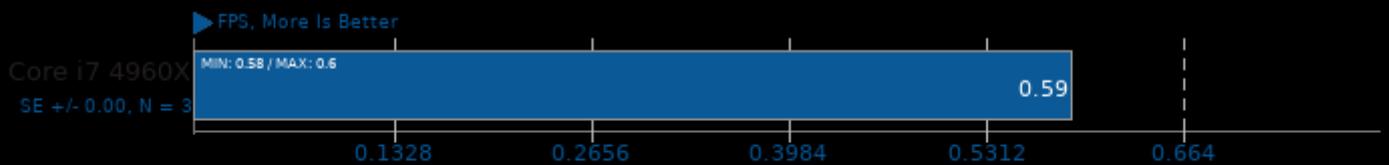
## Appleseed 2.0 Beta

Scene: Disney Material



## OSPray 1.8.5

Demo: San Miguel - Renderer: Path Tracer



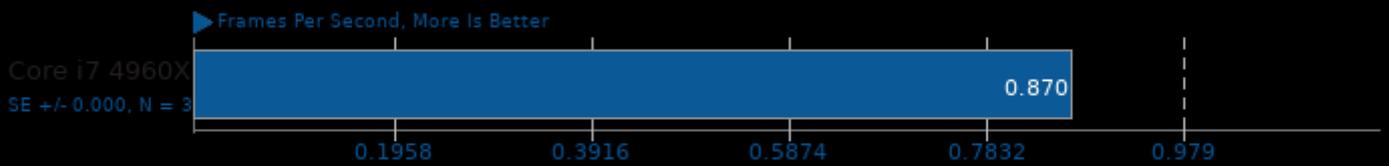
## Blender 2.82

Blend File: BMW27 - Compute: CPU-Only



## SVT-AV1 0.8

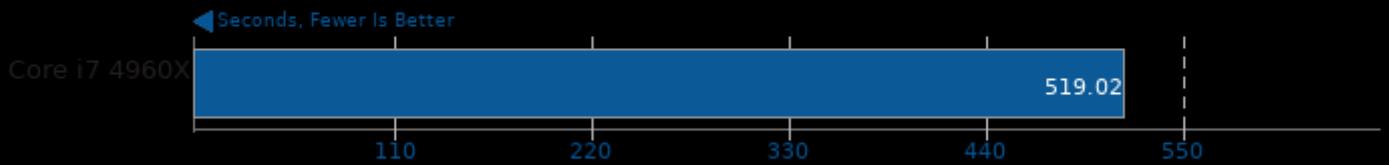
Encoder Mode: Enc Mode 8 - Input: 1080p



1. (CXX) g++ options: -fPIE -fPIC -pie

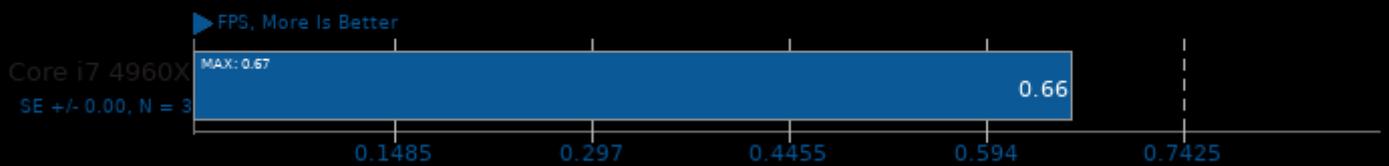
## Appleseed 2.0 Beta

Scene: Material Tester



## OSPray 1.8.5

Demo: XFrog Forest - Renderer: Path Tracer



## libgav1 2019-10-05

Video Input: Summer Nature 1080p



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

## dav1d 0.5.0

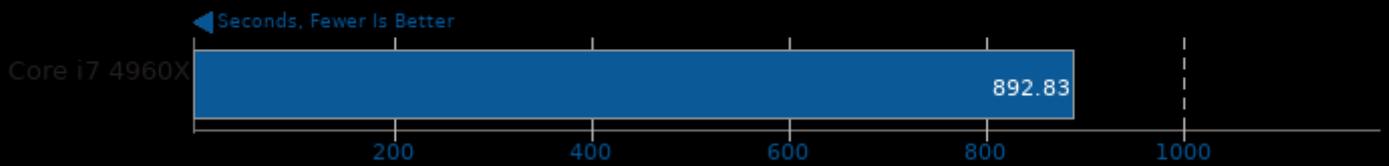
Video Input: Chimera 1080p 10-bit



1. (CC) gcc options: -pthread

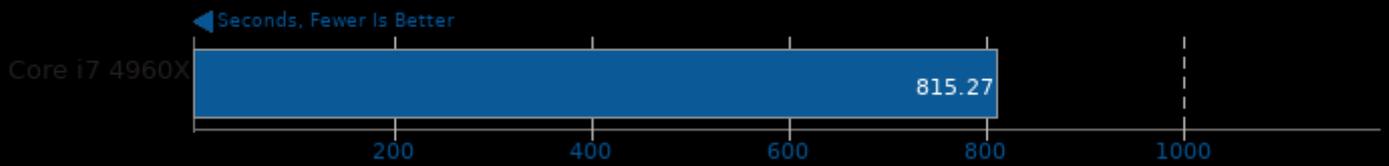
## Radiance Benchmark 5.0

Test: Serial



## Timed LLVM Compilation 6.0.1

Time To Compile



## libgav1 2019-10-05

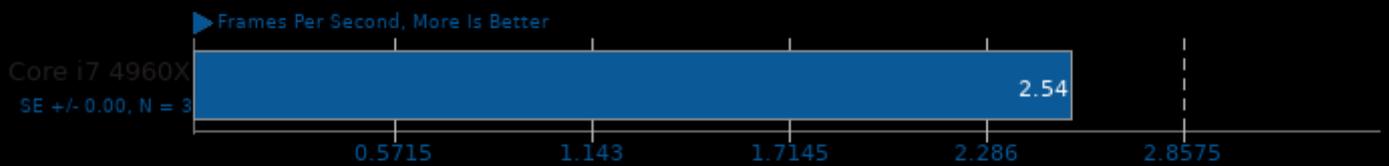
Video Input: Chimera 1080p



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

## SVT-HEVC 1.4.1

1080p 8-bit YUV To HEVC Video Encode



1. (CC) gcc options: -fPIE -fPIC -O3 -O2 -pie -rdynamic -lthread -lrt

## Build2 0.12

Time To Compile



## Tachyon 0.99b6

Total Time



1. (GCC) gcc options: -m64 -O3 -fomit-frame-pointer -ffast-math -ltachyon -lm -lpthread

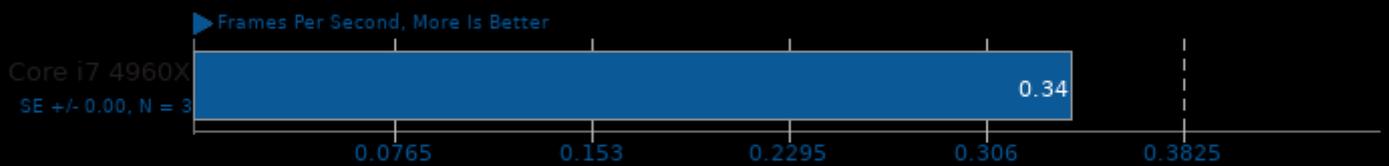
## OSPray 1.8.5

Demo: XFrog Forest - Renderer: SciVis



## AOM AV1 2020-01-10

Encoder Mode: Speed 4 Realtime



1. (GXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -lpthread

## Timed GDB GNU Debugger Compilation 9.1

Time To Compile



## C-Ray 1.1

Total Time - 4K, 16 Rays Per Pixel



1. (GCC) gcc options: -lm -lpthread -O3

## Timed Linux Kernel Compilation 5.4

Time To Compile

Seconds, Fewer Is Better



## VP9 libvpx Encoding 1.8.2

Speed: Speed 0

Frames Per Second, More Is Better



1. (CXX) g++ options: -m64 -lm -lpthread -O3 -fPIC -U\_FORTIFY\_SOURCE -std=c++11

## Embree 3.6.1

Binary: Pathtracer - Model: Asian Dragon Obj

Frames Per Second, More Is Better



## OSPray 1.8.5

Demo: NASA Streamlines - Renderer: Path Tracer

FPS, More Is Better



## Embree 3.6.1

Binary: Pathtracer ISPC - Model: Asian Dragon Obj

Frames Per Second, More Is Better



## Embree 3.6.1

Binary: Pathtracer - Model: Crown

Frames Per Second, More Is Better



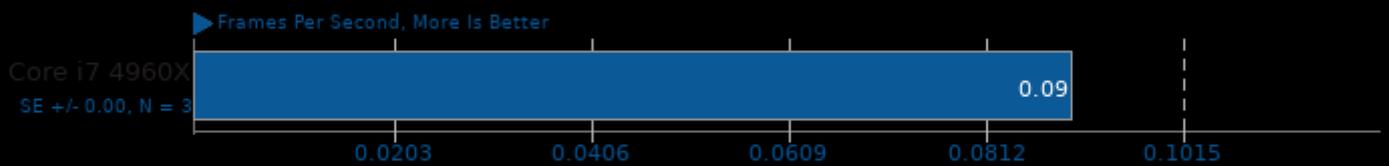
## OSPray 1.8.5

Demo: San Miguel - Renderer: SciVis



## AOM AV1 2020-01-10

Encoder Mode: Speed 0 Two-Pass



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -pthread

## Timed FFmpeg Compilation 4.2.2

Time To Compile



## POV-Ray 3.7.0.7

Trace Time



1. (CXX) g++ options: -pipe -O3 -fast-math -march=native -pthread -ISDL -ISM -IICE -IX11 -Itiff -ljpeg -lpng -lz -lrt -lm -lboost\_thread -lboost\_system

## Embree 3.6.1

Binary: Pathtracer ISPC - Model: Crown



## OSPray 1.8.5

Demo: NASA Streamlines - Renderer: SciVis



## Timed PHP Compilation 7.4.2

Time To Compile



## Radiance Benchmark 5.0

Test: SMP Parallel



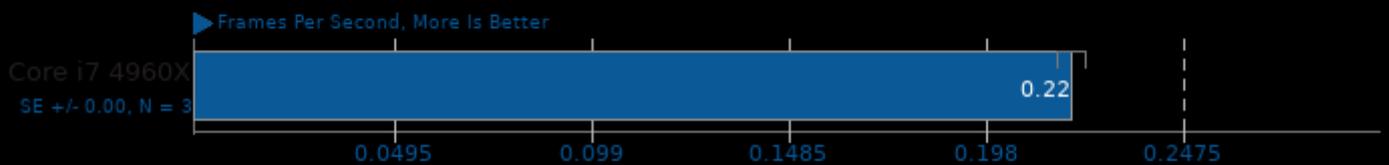
## Embree 3.6.1

Binary: Pathtracer - Model: Asian Dragon



## AOM AV1 2020-01-10

Encoder Mode: Speed 2 Two-Pass



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -lpthread

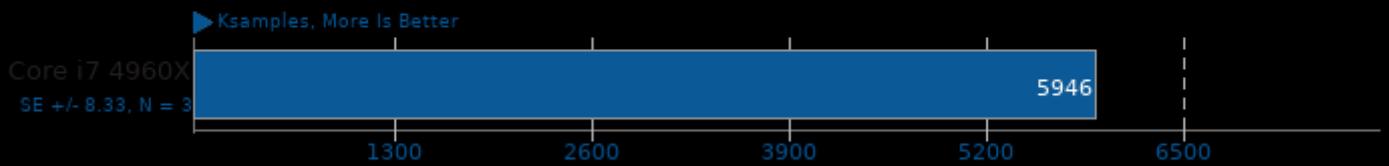
## Embree 3.6.1

Binary: Pathtracer ISPC - Model: Asian Dragon



## Chaos Group V-RAY 4.10.07

Mode: CPU



## Timed MPlayer Compilation 1.4

Time To Compile



## x264 2019-12-17

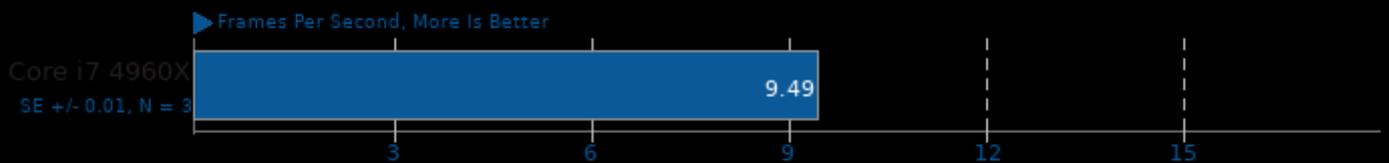
H.264 Video Encoding



1. (ICC) gcc options: -ldl -m64 -lm -lpthread -O3 -ffast-math -std=gnu99 -fPIC -fomit-frame-pointer -fno-tree-vectorize

## AOM AV1 2020-01-10

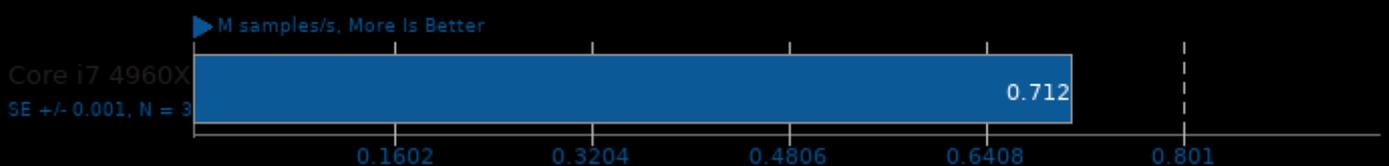
Encoder Mode: Speed 6 Realtime



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -lpthread

## IndigoBench 4.0.64

Scene: Bedroom



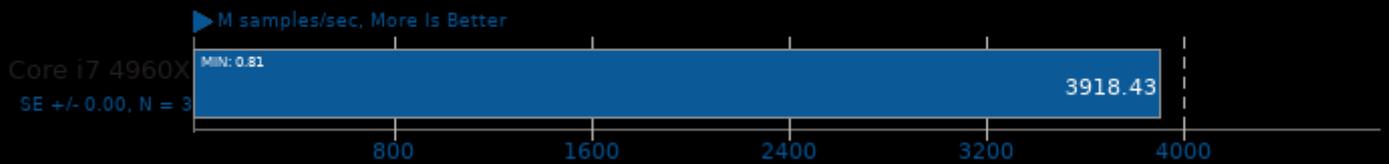
## LuxCoreRender 2.2

Scene: DLSC



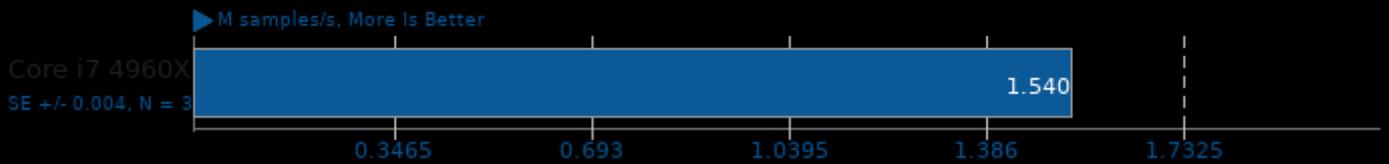
## LuxCoreRender 2.2

Scene: Rainbow Colors and Prism



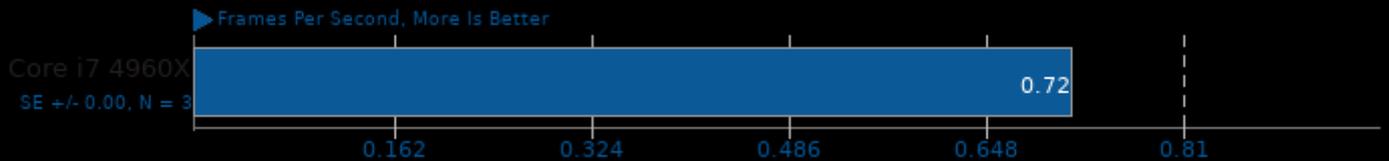
## IndigoBench 4.0.64

Scene: Supercar



## AOM AV1 2020-01-10

Encoder Mode: Speed 5 Two-Pass



1. (CXX) g++ options: -O3 -std=c++11 -U\_FORTIFY\_SOURCE -lm -pthread

## Timed ImageMagick Compilation 6.9.0

Time To Compile



## dav1d 0.5.0

Video Input: Summer Nature 4K



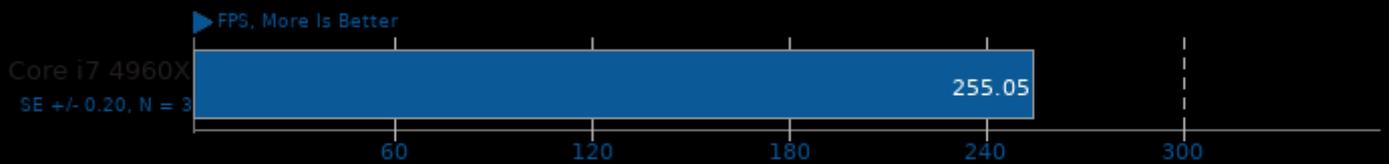
## Tungsten Renderer 0.2.2

Scene: Hair



## TTSIOD 3D Renderer 2.3b

Phong Rendering With Soft-Shadow Mapping



## OSPray 1.8.5

Demo: Magnetic Reconnection - Renderer: SciVis



## dav1d 0.5.0

Video Input: Chimera 1080p



### Tungsten Renderer 0.2.2

Scene: Water Caustic



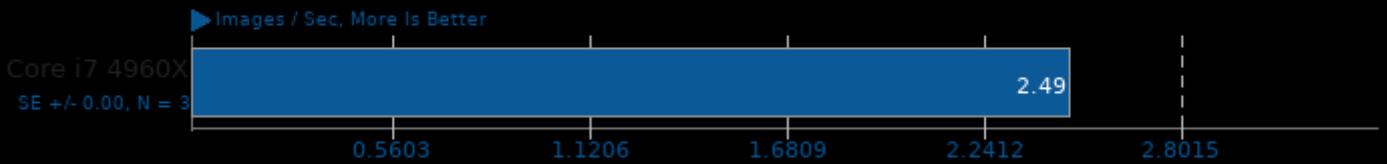
### VP9 libvpx Encoding 1.8.2

Speed: Speed 5



### Intel Open Image Denoise 1.0.0

Scene: Memorial



### AOBench

Size: 2048 x 2048 - Total Time



### Timed Apache Compilation 2.4.41

Time To Compile



## x265 3.1.2

H.265 1080p Video Encoding



## AOM AV1 2020-01-10

Encoder Mode: Speed 8 Realtime



## Smallpt 1.0

Global Illumination Renderer; 128 Samples



## FLAC Audio Encoding 1.3.2

WAV To FLAC



## Tungsten Renderer 0.2.2

Scene: Volumetric Caustic



1. (CXX) g++ options: -std=c++0x -march=ivybridge -msse2 -msse3 -msse3 -msse4.1 -msse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx2

## dav1d 0.5.0

Video Input: Summer Nature 1080p



1. (C) gcc options: -pthread

## Tungsten Renderer 0.2.2

Scene: Non-Exponential



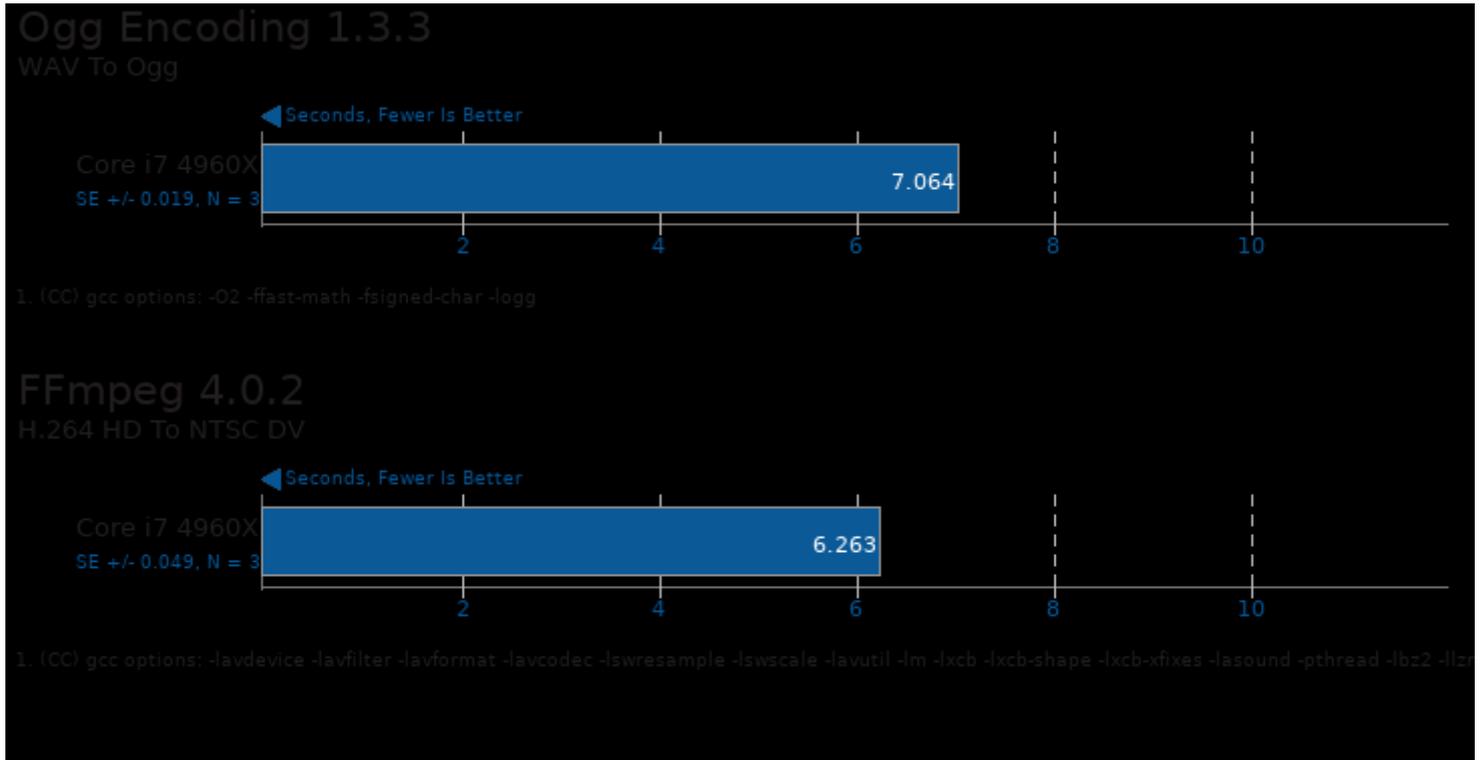
1. (CXX) g++ options: -std=c++0x -march=ivybridge -msse2 -msse3 -msse3 -msse4.1 -msse4.2 -mno-sse4a -mno-avx -mno-fma -mno-bmi2 -mno-avx2

## LAME MP3 Encoding 3.100

WAV To MP3



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



*This file was automatically generated via the Phoronix Test Suite benchmarking software on Thursday, 28 March 2024 16:56.*