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## Laptop Graphics

Intel Core i7-1165G7 testing with a Dell 0GG9PT (1.2.5 BIOS) and Intel Xe TGL GT2 3GB on Ubuntu 21.04 via the Phoronix Test Suite.

### Test Systems:

#### Core i7 1165G7

Processor: Intel Core i7-1165G7 @ 4.70GHz (4 Cores / 8 Threads), Motherboard: Dell 0GG9PT (1.2.5 BIOS), Chipset: Intel Tiger Lake-LP, Memory: 16GB, Disk: Kioxia KBG40ZNS256G NVMe 256GB, Graphics: Intel Xe TGL GT2 3GB (1300MHz), Audio: Realtek ALC289, Network: Intel Wi-Fi 6 AX201

OS: Ubuntu 21.04, Kernel: 5.13.0-051300-generic (x86\_64), Desktop: GNOME Shell 3.38.4, Display Server: X Server + Wayland, OpenGL: 4.6 Mesa 21.2.0-devel (git-25ad699 2021-07-02 hirsute-oibaf-ppa), Vulkan: 1.2.182, Compiler: GCC 10.3.0, File-System: ext4, Screen Resolution: 1920x1200

Kernel Notes: Transparent Huge Pages: madvise

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++,m2 --enable-libphobos-checking=release --enable-libstdcxx-debug

```
--enable-libstdcxx-time=yes      --enable-link-mutex      --enable-multiarch      --enable-multilib      --enable-nls      --enable-objc-gc=auto
--enable-offload-targets=nvptx-none=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-nvptx/usr,amdgn-amdhsa=/build/gcc-10-gDeRY6/gcc-10-10.3.0/debian/tmp-gcn/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-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\_pstate powersave - CPU Microcode: 0x88 - Thermald 2.4.3

Java Notes: OpenJDK Runtime Environment (build 11.0.11+9-Ubuntu-0ubuntu2)

Python Notes: Python 3.9.5

Security Notes: itlb\_multihit: Not affected + 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/swaps barriers and \_\_user pointer sanitization + spectre\_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx\_async\_abort: Not affected

## Core i7 1165G7

<b>RealSR-NCNN - 4x - No (sec)</b>	65.195
Standard Deviation	0.2%
<b>RealSR-NCNN - 4x - Yes (sec)</b>	507.349
Standard Deviation	0.1%
<b>Waifu2x-NCNN Vulkan - 2x - 3 - No (sec)</b>	4.204
Standard Deviation	1.4%
<b>Waifu2x-NCNN Vulkan - 2x - 3 - Yes (sec)</b>	27.363
Standard Deviation	0.2%
<b>VkResample - 2x - Single (ms)</b>	117.058
Standard Deviation	0%
<b>DDraceNetwork - 1920 x 1200 - Fullscreen - OpenGL 3.3 - Default</b>	274.62
<b>RaiNyMore2 (FPS)</b>	
Standard Deviation	0.8%
<b>DDraceNetwork - 1920 x 1200 - Fullscreen - OpenGL 3.3 - Default</b>	341.05
<b>Multeasymap (FPS)</b>	
Standard Deviation	1.2%
<b>ET: Legacy - 1920 x 1200 (FPS)</b>	245.1
Standard Deviation	0.6%
<b>Tesseract - 1920 x 1200 (FPS)</b>	161.3847
Standard Deviation	0.8%
<b>Unvanquished - 1920 x 1200 - High (FPS)</b>	188.6
Standard Deviation	0.6%
<b>Unvanquished - 1920 x 1200 - Ultra (FPS)</b>	164.1
Standard Deviation	1%
<b>Unvanquished - 1920 x 1200 - Medium (FPS)</b>	201.2
Standard Deviation	1.1%
<b>Warsow - 1920 x 1200 (FPS)</b>	246.7
Standard Deviation	0.5%
<b>Xonotic - 1920 x 1200 - Low (FPS)</b>	364.8214525
Standard Deviation	1.5%
<b>Xonotic - 1920 x 1200 - High (FPS)</b>	227.6012483
Standard Deviation	0.8%
<b>Xonotic - 1920 x 1200 - Ultra (FPS)</b>	187.7293240
Standard Deviation	0.6%
<b>Xonotic - 1920 x 1200 - Ultimate (FPS)</b>	142.9296857
Standard Deviation	0.7%
<b>yquake2 - OpenGL 3.x - 1920 x 1080 (FPS)</b>	728.1
Standard Deviation	0.1%
<b>GLmark2 - 1920 x 1200 (Score)</b>	821

<b>ParaView - Many Spheres - 1920 x 1200 (Frames / Sec)</b>	8.18	Standard Deviation	0.8%
<b>ParaView - Many Spheres - 1920 x 1200 (MiPolys / Sec)</b>	820.452	Standard Deviation	0.8%
<b>ParaView - Wavelet Volume - 1920 x 1200 (Frames / Sec)</b>	70.66	Standard Deviation	1.3%
<b>ParaView - Wavelet Volume - 1920 x 1200 (MiVoxels / Sec)</b>	1131	Standard Deviation	1.3%
<b>ParaView - Wavelet Contour - 1920 x 1200 (Frames / Sec)</b>	60.02	Standard Deviation	0.1%
<b>ParaView - Wavelet Contour - 1920 x 1200 (MiPolys / Sec)</b>	625.519	Standard Deviation	0.1%
<b>Java 2D Microbenchmark - Text Rendering (Units/sec)</b>	26593	Standard Deviation	4.3%
<b>Java 2D Microbenchmark - Image Rendering (Units/sec)</b>	7149364	Standard Deviation	0.2%
<b>Java 2D Microbenchmark - V.G.R (Units/sec)</b>	3096130	Standard Deviation	0.4%
<b>GpuTest - GiMark - 1920 x 1200 - Fullscreen (Points)</b>	2082	Standard Deviation	0.1%
<b>GpuTest - Plot3D - 1920 x 1200 - Fullscreen (Points)</b>	12453	Standard Deviation	9.6%
<b>GpuTest - Furmark - 1920 x 1200 - Fullscreen (Points)</b>	2008	Standard Deviation	0%
<b>GpuTest - TessMark - 1920 x 1200 - Fullscreen (Points)</b>	5606	Standard Deviation	0.3%
<b>GpuTest - Triangle - 1920 x 1200 - Fullscreen (Points)</b>	221442	Standard Deviation	0.8%
<b>GpuTest - Pixmark Piano - 1920 x 1200 - Fullscreen (Points)</b>	620	Standard Deviation	0.5%
<b>GpuTest - Pixmark Volplosion - 1920 x 1200 - Fullscreen (Points)</b>	1726	Standard Deviation	0.2%
<b>Basemark GPU - OpenGL - 1920 x 1200 - High (FPS)</b>	33.52	Standard Deviation	0.4%
<b>Basemark GPU - Vulkan - 1920 x 1200 - High (FPS)</b>	32.78	Standard Deviation	0.9%
<b>Basemark GPU - OpenGL - 1920 x 1200 - Medium (FPS)</b>	75.90	Standard Deviation	1.4%
<b>Basemark GPU - Vulkan - 1920 x 1200 - Medium (FPS)</b>	194.11	Standard Deviation	0.9%

**RealSR-NCNN 20200818**

Scale: 4x - TAA: No

**RealSR-NCNN 20200818**

Scale: 4x - TAA: Yes

**Waifu2x-NCNN Vulkan 20200818**

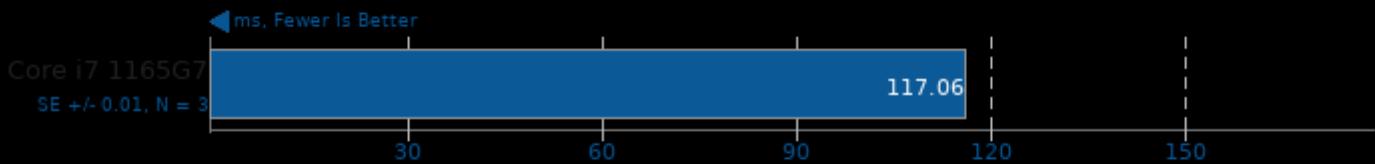
Scale: 2x - Denoise: 3 - TAA: No

**Waifu2x-NCNN Vulkan 20200818**

Scale: 2x - Denoise: 3 - TAA: Yes

**VkResample 1.0**

Upscale: 2x - Precision: Single



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

## DDrakeNetwork 15.3.1

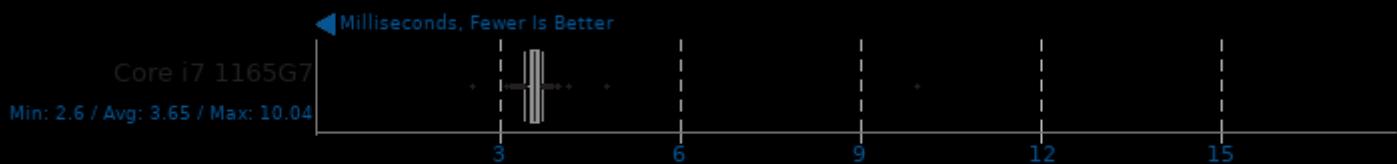
Resolution: 1920 x 1200 - Mode: Fullscreen - Renderer: OpenGL 3.3 - Zoom: Default - Demo: RaiNyMore2



1. (CXX) g++ options: -O3 -fPIE -pthread -lnotify -lgdk\_pixbuf-2.0 -gio-2.0 -gobject-2.0 -glib-2.0

## DDrakeNetwork 15.3.1

Resolution: 1920 x 1200 - Mode: Fullscreen - Renderer: OpenGL 3.3 - Zoom: Default - Demo: RaiNyMore2 - Total Frame Time



1. (CXX) g++ options: -O3 -fPIE -pthread -lnotify -lgdk\_pixbuf-2.0 -gio-2.0 -gobject-2.0 -glib-2.0

## DDrakeNetwork 15.3.1

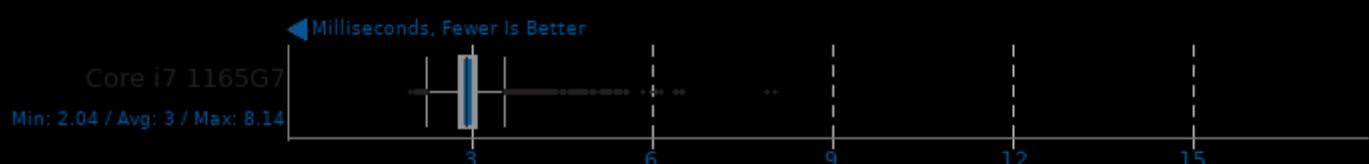
Resolution: 1920 x 1200 - Mode: Fullscreen - Renderer: OpenGL 3.3 - Zoom: Default - Demo: Multiesymap



1. (CXX) g++ options: -O3 -fPIE -pthread -lnotify -lgdk\_pixbuf-2.0 -gio-2.0 -gobject-2.0 -glib-2.0

## DDrakeNetwork 15.3.1

Resolution: 1920 x 1200 - Mode: Fullscreen - Renderer: OpenGL 3.3 - Zoom: Default - Demo: Multiesymap - Total Frame Time



1. (CXX) g++ options: -O3 -fPIE -pthread -lnotify -lgdk\_pixbuf-2.0 -gio-2.0 -gobject-2.0 -glib-2.0

## ET: Legacy 2.77

Resolution: 1920 x 1200



## Tesseract 2014-05-12

Resolution: 1920 x 1200



## Unvanquished 0.52.1

Resolution: 1920 x 1200 - Effects Quality: High



## Unvanquished 0.52.1

Resolution: 1920 x 1200 - Effects Quality: Ultra



## Unvanquished 0.52.1

Resolution: 1920 x 1200 - Effects Quality: Medium



## Warsow 2.5 Beta

Resolution: 1920 x 1200



## Xonotic 0.8.2

Resolution: 1920 x 1200 - Effects Quality: Low



Xonotic 0.8.2



1. (CC) gcc options: -lmp -ldl -rdynamic -shared -fSDLL2 -O2 -pipe -fomit-frame-pointer -std=gnu99 -fno-strict-aliasing -fwrapv -fvisibility=hidden -MMD -mfpu



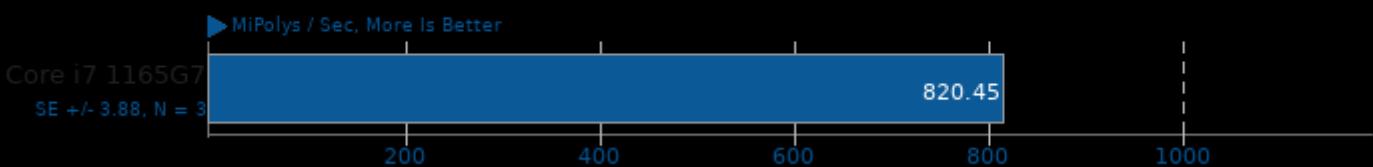
## ParaView 5.9

Test: Many Spheres - Resolution: 1920 x 1200



## ParaView 5.9

Test: Many Spheres - Resolution: 1920 x 1200



## ParaView 5.9

Test: Wavelet Volume - Resolution: 1920 x 1200



## ParaView 5.9

Test: Wavelet Volume - Resolution: 1920 x 1200



## ParaView 5.9

Test: Wavelet Contour - Resolution: 1920 x 1200



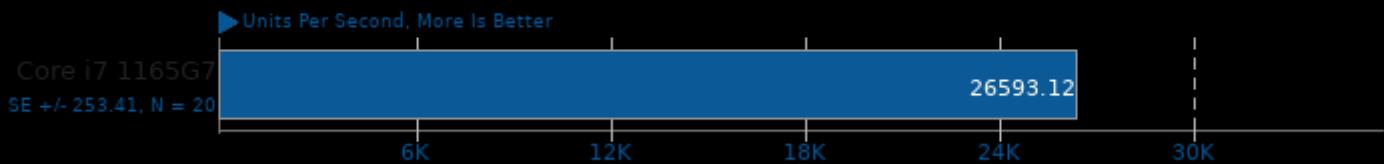
## ParaView 5.9

Test: Wavelet Contour - Resolution: 1920 x 1200



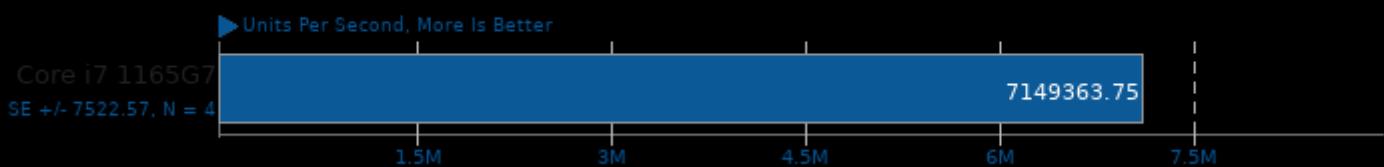
## Java 2D Microbenchmark 1.0

Rendering Test: Text Rendering



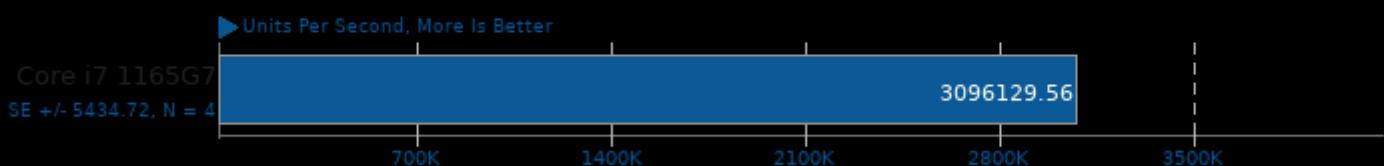
## Java 2D Microbenchmark 1.0

Rendering Test: Image Rendering



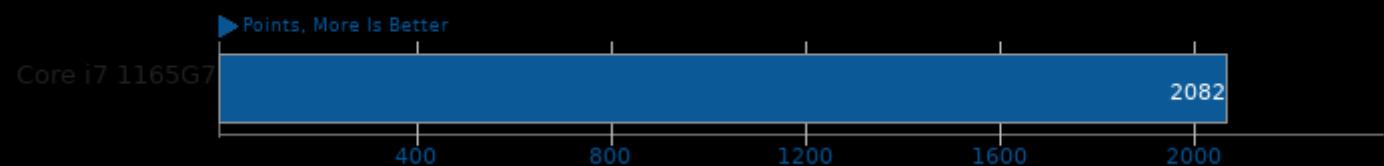
## Java 2D Microbenchmark 1.0

Rendering Test: Vector Graphics Rendering



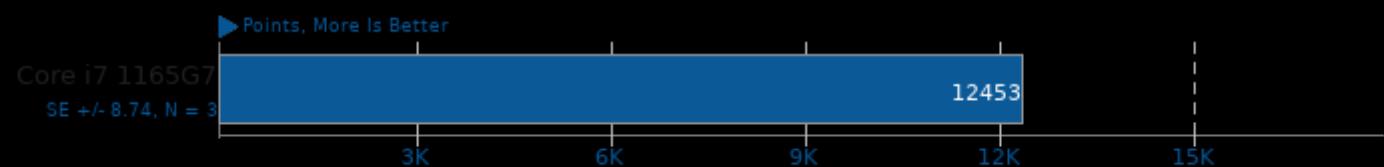
## GpuTest 0.7.0

Test: GiMark - Resolution: 1920 x 1200 - Mode: Fullscreen



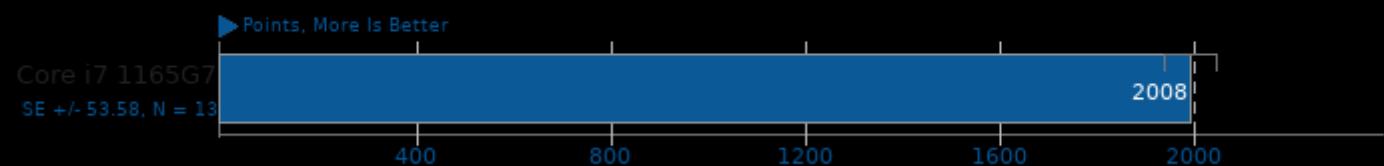
## GpuTest 0.7.0

Test: Plot3D - Resolution: 1920 x 1200 - Mode: Fullscreen



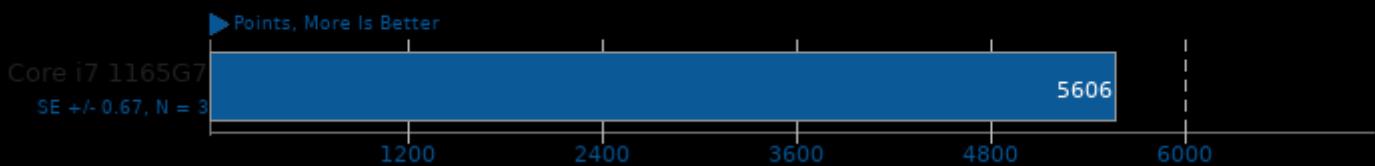
## GpuTest 0.7.0

Test: Furmark - Resolution: 1920 x 1200 - Mode: Fullscreen



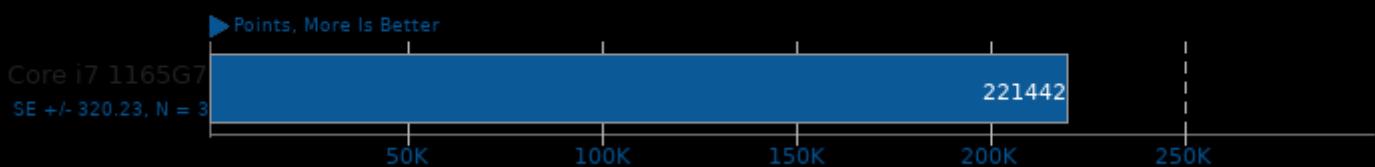
## GpuTest 0.7.0

Test: TessMark - Resolution: 1920 x 1200 - Mode: Fullscreen



## GpuTest 0.7.0

Test: Triangle - Resolution: 1920 x 1200 - Mode: Fullscreen



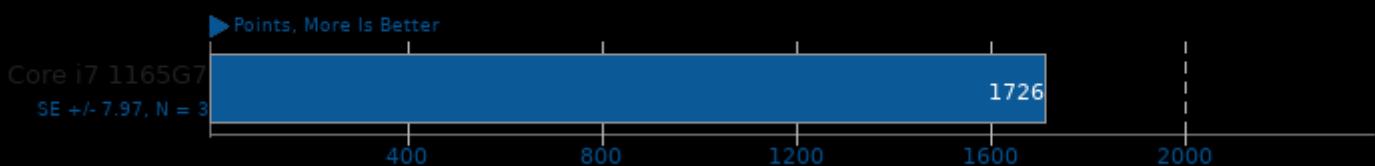
## GpuTest 0.7.0

Test: Pixmark Piano - Resolution: 1920 x 1200 - Mode: Fullscreen



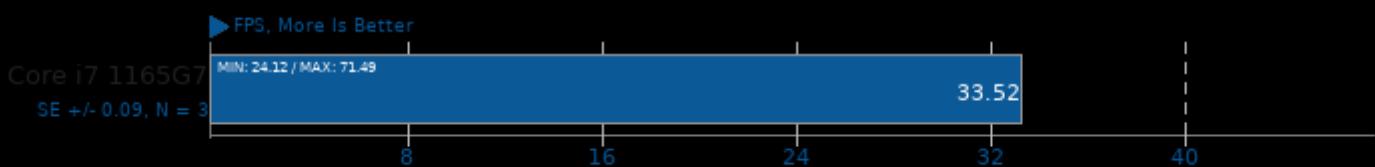
## GpuTest 0.7.0

Test: Pixmark Volplosion - Resolution: 1920 x 1200 - Mode: Fullscreen



## Basemark GPU 1.2

Renderer: OpenGL - Resolution: 1920 x 1200 - Graphics Preset: High



## Basemark GPU 1.2

Renderer: Vulkan - Resolution: 1920 x 1200 - Graphics Preset: High



## Basemark GPU 1.2

Renderer: OpenGL - Resolution: 1920 x 1200 - Graphics Preset: Medium



## Basemark GPU 1.2

Renderer: Vulkan - Resolution: 1920 x 1200 - Graphics Preset: Medium



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