

May 16

Research about PBRT *Physically Based Rendering*

May 17, 2022

Research <https://github.com/mmp/pbrt-v3> the book <https://www.pbr-book.org/> I saw and follow this tutorial <https://www.youtube.com/watch?v=Bx6YKGteEB8>

Download Cmake here <https://cmake.org/download/>

Install git

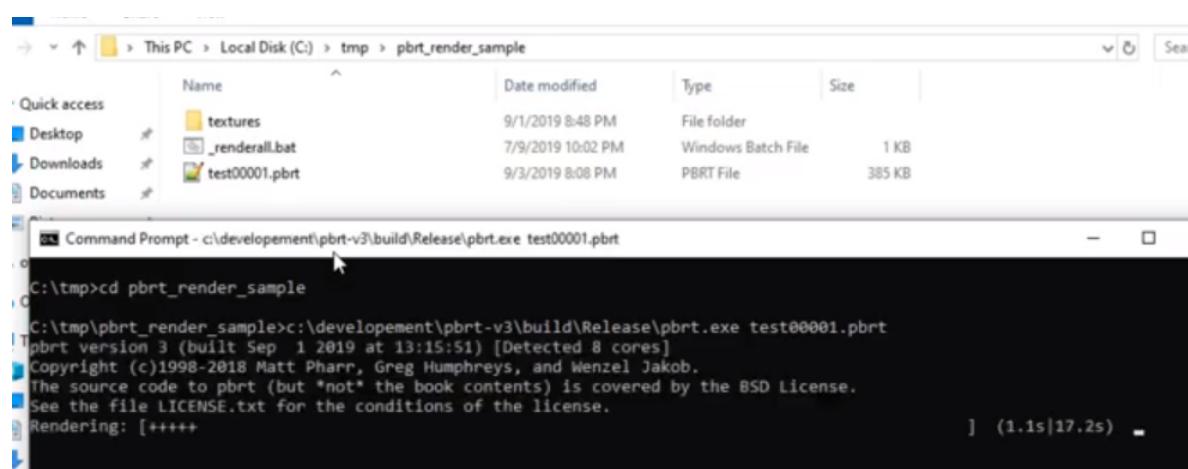
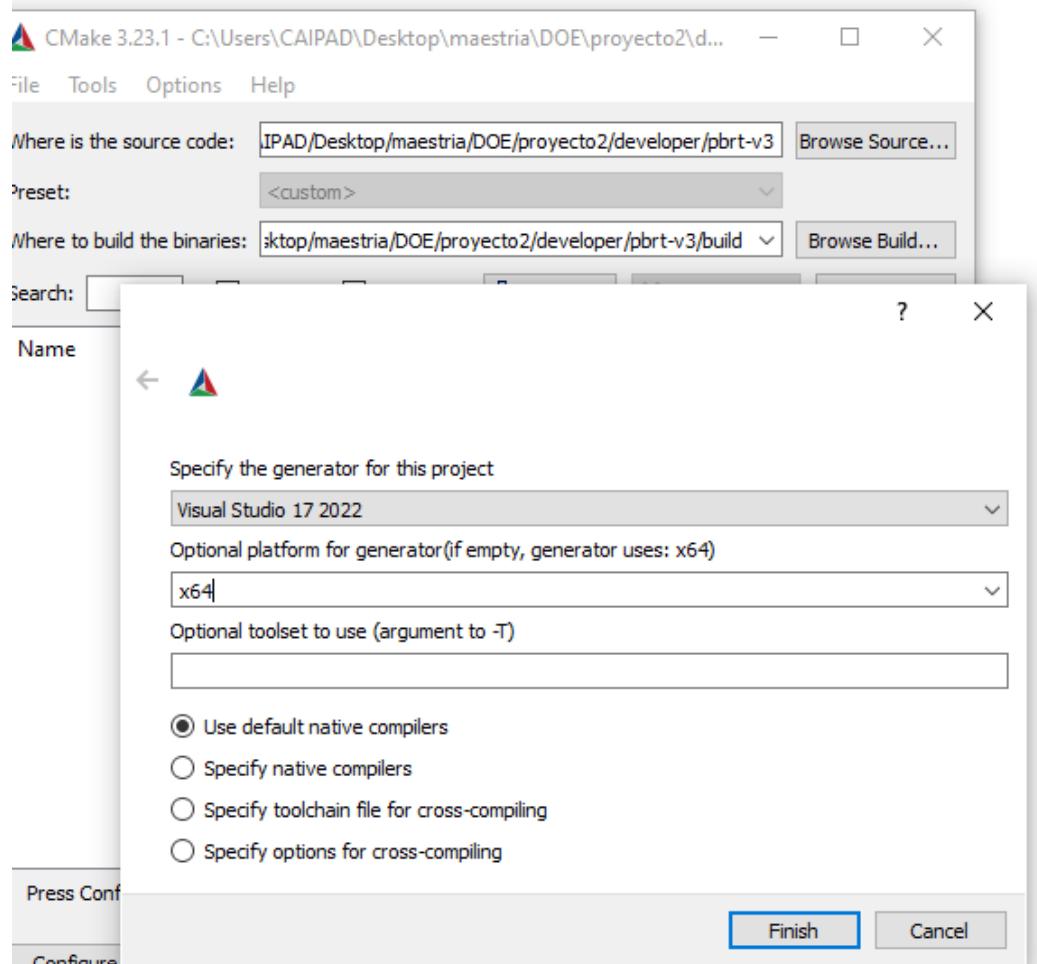
Install visual studio

<https://visualstudio.microsoft.com/es/thank-you-downloading-visual-studio/?sku=Community&channel=Release&version=VS2022&source=VSLandingPage&cid=2030&passive=false>

Delete files in my disk to have free 59.4GB

May 18,

After install the previous programs on windows, I continue with the tutorial



C:\Users\CAIPAD\Desktop\maestria\DOE\proyecto2\developer\pbrt-v3\scenes

C:\Users\CAIPAD\Desktop\maestria\DOE\proyecto2\developer\pbrt-v3\build\Release\pbrt.exe
killeroo-simple.pbrt

With that above I render killer simple example, lookr like in BHV mode

May 19 th

I prove Accelerator “kd-tree” in Killero example.

I get this result with kd-tree

```
Rendering: [+++++-----] (21.9s)
Statistics:
  Integrator
    Camera rays traced          3920000
    Path length                  1.640 avg [range 0 - 5]
    Zero-radiance paths         1046948 / 6589260 (15.89%)
  Intersections
    Regular ray intersection tests 16870507
    Shadow ray intersection tests 6157124
    Ray-triangle intersection tests 17046181 / 233863533 (7.29%)
  Memory
    Film pixels                 14.95 MiB
    Primitives                   4.57 MiB
    TransformCache                260.00 kB
    Triangle meshes                5.60 MiB
  Scene
    AreaLights                   1
    Lights                        1
    Materials created              6
    Shapes created                 66533
    Probes per TransformCache lookup 1.000 avg [range 1 - 1]
    TransformCache hits            3 / 12 (25.00%)
    Triangles per triangle mesh      66532 / 4 (16633.00x)
```

And cometing kd-tree I get

```
Rendering: [+++++-----] (15.4s)
Statistics:
  BVH
    Interior nodes               59188
    Leaf nodes                   59189
    Primitives per leaf node     66533 / 59189 (1.12x)
  Integrator
    Camera rays traced          3920000
    Path length                  1.640 avg [range 0 - 5]
    Zero-radiance paths         1046748 / 6589260 (15.89%)
  Intersections
    Regular ray intersection tests 16870507
    Shadow ray intersection tests 6157124
    Ray-triangle intersection tests 10526970 / 37968638 (27.73%)
  Memory
    BVH tree                     4.63 MiB
    Film pixels                  14.95 MiB
    Primitives                   4.57 MiB
    TransformCache                260.00 kB
    Triangle meshes                5.60 MiB
  Scene
    AreaLights                   1
    Lights                        1
    Materials created              6
    Shapes created                 66533
    Probes per TransformCache lookup 1.000 avg [range 1 - 1]
    TransformCache hits            3 / 12 (25.00%)
    Triangles per triangle mesh      66532 / 4 (16633.00x)
```

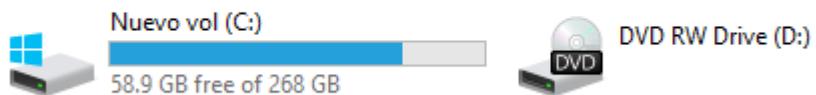
May 21

I follow this tutorial

<https://docs.microsoft.com/en-us/windows/wsl/install>



✓ Devices and drives (2)



	NAME	FRIENDLY NAME
*	Ubuntu	Ubuntu
	Debian	Debian GNU/Linux
	kali-linux	Kali Linux Rolling
	openSUSE-42	openSUSE Leap 42
	SLES-12	SUSE Linux Enterprise Server v12
	Ubuntu-16.04	Ubuntu 16.04 LTS
	Ubuntu-18.04	Ubuntu 18.04 LTS
	Ubuntu-20.04	Ubuntu 20.04 LTS

```
C:\Users\CAIPAD>wsl -l -v
Windows Subsystem for Linux has no installed distributions.
Distributions can be installed by visiting the Microsoft Store:
https://aka.ms/wslstore
```

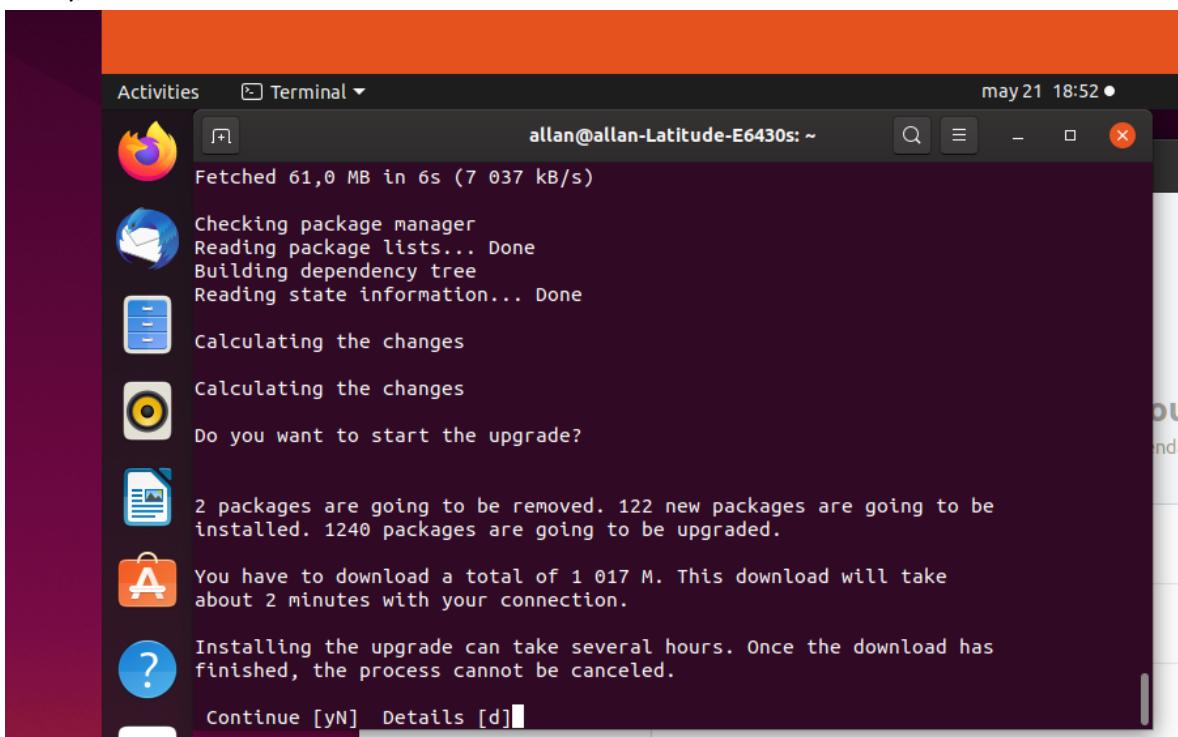
From here <https://wiki.ubuntu.com/WSL>

- Ubuntu 20.04 LTS (Focal) is the current LTS release, supporting both x64 and ARM64 architecture.

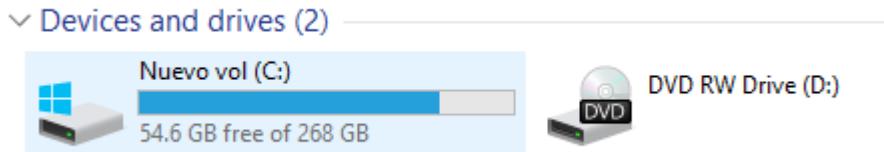
I follow this tutorial

<https://wiki.ubuntu.com/FocalFossa/ReleaseNotes>

ideally, we should use same versions but



after installin WSL I got



install cmake for WSL ubuntu:

```
sudo apt install cmake
```

after install cmake



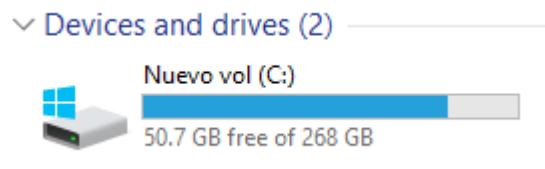
```

allan@DESKTOP-U95BU7I:~$ gcc --version
gcc (Ubuntu 9.3.0-10ubuntu2) 9.3.0
Copyright (C) 2019 Free Software Foundation, Inc.
This is free software; see the source for copying conditions. There is NO
warranty; not even for MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

allan@DESKTOP-U95BU7I:~$ git --version
git version 2.25.1
allan@DESKTOP-U95BU7I:~$
```

~/development/pbrt-v3/build

after build



and the killero example gives this:

```

allan@DESKTOP-U95BU7I: ~/development/pbrt-v3/scenes
See the file LICENSE.txt for the conditions of the license.
Rendering: [=====] (114.7s)
Statistics:
BVH
  Interior nodes                      59188
  Leaf nodes                          59189
  Primitives per leaf node           66533 / 59189 (1.12x)
Integrator
  Camera rays traced                 3920000
  Path length                         1.640 avg [range 0 - 5]
  Zero-radiance paths                6589260 (15.89%)
Intersections
  Regular ray intersection tests     16870506
  Shadow ray intersection tests      6157124
  Ray-triangle intersection tests    10526971 / 37968669 (27.73%)
Memory
  BVH tree                            4.63 MiB
  Film pixels                         14.95 MiB
  Primitives                           4.57 MiB
  TransformCache                      260.00 kB
  Triangle meshes                     5.60 MiB
Scene
  AreaLights                          1
  Lights                               1
  Materials created                  6
  Shapes created                      66533
  Probes per TransformCache lookup   1.000 avg [range 1 - 1]
  TransformCache hits                 3 / 12 (25.00%)
  Triangles per triangle mesh        66532 / 4 (16633.00x)
allan@DESKTOP-U95BU7I:~/development/pbrt-v3/scenes$
```

This is my free space on ubuntu

```
Activities Terminal may 21 14:11
allan@allan-Latitude-E6430s:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:    Ubuntu 19.10
Release:        19.10
Codename:       eoan
allan@allan-Latitude-E6430s:~$
```

```
Activities Terminal may 21 14:23
allan@allan-Latitude-E6430s:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            3,9G   0    3,9G  0% /dev
tmpfs           785M  1,7M  784M  1% /run
/dev/sda3        29G  8,4G  19G  31% /
tmpfs           3,9G  98M  3,8G  3% /dev/shm
tmpfs           5,0M  4,0K  5,0M  1% /run/lock
tmpfs           3,9G   0    3,9G  0% /sys/fs/cgroup
/dev/loop0       2,7M  2,7M   0  100% /snap/gnome-calculator/920
/dev/loop2       768K  768K   0  100% /snap/gnome-characters/741
/dev/loop4       111M  111M   0  100% /snap/core/12821
/dev/loop1       62M   62M   0  100% /snap/core20/1328
/dev/loop5       128K  128K   0  100% /snap/bare/5
/dev/loop3       68M   68M   0  100% /snap/jupyter/6
/dev/loop7       165M  165M   0  100% /snap/gnome-3-28-1804/161
/dev/loop6       219M  219M   0  100% /snap/gnome-3-34-1804/77
/dev/loop10      248M  248M   0  100% /snap/gnome-3-38-2004/87
/dev/loop9       56M   56M   0  100% /snap/core18/2344
/dev/loop8       640K  640K   0  100% /snap/gnome-logs/106
/dev/loop11      249M  249M   0  100% /snap/gnome-3-38-2004/99
/dev/loop14      1,0M  1,0M   0  100% /snap/gnome-logs/81
/dev/loop13      66M   66M   0  100% /snap/gtk-common-themes/1519
/dev/loop18      45M   45M   0  100% /snap/gtk-common-themes/1353
/dev/loop17      62M   62M   0  100% /snap/core20/1376
/dev/loop12      56M   56M   0  100% /snap/core18/2284
/dev/loop15      150M  150M   0  100% /snap/gnome-3-28-1804/71
/dev/loop16      219M  219M   0  100% /snap/gnome-3-34-1804/72
/dev/loop19      2,5M  2,5M   0  100% /snap/gnome-calculator/884
/dev/loop20      768K  768K   0  100% /snap/gnome-characters/761
tmpfs           785M  76K  785M  1% /run/user/1000
allan@allan-Latitude-E6430s:~$
```

example on windows:

```
C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\coffee-splash>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pb
t.exe splash.pbrt
pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores]
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [|||||||||] (462.5s|4020.1s) ^C
C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\coffee-splash>
```

```
C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\hair>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe str
aight-hair.pbrt
pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores]
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [|||||||||||||||||||||] (384.9s|2046.1s)
```

```
C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\figures>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe
f10-1ac.pbrt
pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores]
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [|||||||||||||||||||||||||||||||||||||] (85.1s)
Statistics:
  BVH
    Interior nodes                      1
    Leaf nodes                          2
    Primitives per leaf node           3 /      2 (1.50x)
  Integrator
    Camera rays traced                 90000
  Intersections
    Regular ray intersection tests     44301789
    Shadow ray intersection tests     33891195
    Ray-triangle intersection tests   9783147 / 19556362 (50.03%)
  Memory
    BVH tree                           0.19 kB
    Film pixels                        2.75 MiB
    Primitives                         0.21 kB
    Texture MIP maps                  24.00 MiB
    TransformCache                     260.00 kB
    Triangle meshes                   0.34 kB
  Scene
    Lights                            1
    Materials created                 2
    Shapes created                    3
    Probes per TransformCache lookup  1.500 avg [range 1 - 2]
    TransformCache hits              6 (0.08%)
    Triangles per triangle mesh       2 /      1 (2.00x)
  Texture
    EWA lookups                       37573
    Trilinear lookups                 81356599
C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\figures>
```

To copy files from windows to WSL

<https://ridicurious.com/2018/10/18/2-ways-to-copy-files-from-windows-10-to-windows-sub-system-for-linux/>

windows r

and type %userprofile%\AppData\Local\Packages

C:\Users\CAIPAD\AppData\Local\Packages\CanonicalGroupLimited.UbuntuonWindows_79rhkp1fn
dgsc\LocalState\rootfs\home\allan

May 22

chmod u+rx,go-w figures to allow permissions

chmod 600 f10-1ac.pbrt

however, we get a lot of permission denied messages

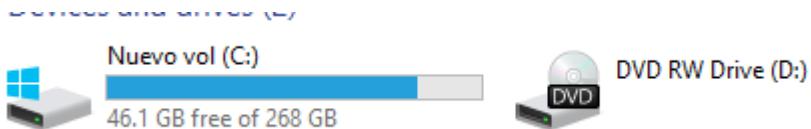
```
allan@DESKTOP-U95BU7I:~/development/pbrt-v3/scenes/figures$ ~/development/pbrt-v3/build/pbrt f10-1ac.pbrt
pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores]
*** DEBUG BUILD ***
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
(The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
f10-1ac.pbrt:21:0: Error: Unable to read image file "./textures/20060807_wells6_hd.exr": Cannot read image file "./textures/20060807_wells6_hd.exr". Permission denied.
f10-1ac.pbrt:37:9: Error: Unable to read image file "./textures/lines.exr": Cannot read image file "./textures/lines.exr". Permission denied.
f10-1ac.pbrt:37:9: Warning: Creating a constant grey texture to replace "./textures/lines.exr".
Rendering: [+++++++] (19.5s|273.6s) ^C
allan@DESKTOP-U95BU7I:~/development/pbrt-v3/scenes/figures$
```

```
cp /mnt/c/Users/CAIPAD/Desktop/maestria/DOE/proyecto2/developer/pbrt-v3/scenes/figures
/home/allan/
```

```
cp /mnt/c/Users/CAIPAD/Desktop/maestria/DOE/proyecto2/developer/pbrt-v3/scenes/figures
/home/allan/development/pbrt-v3/scenes
```

```
rm -R spds
```

Before unzip installation



```
~/development/pbrt-v3/scenes/pbrt-v3-scenes-master-figures/figures
```

```
~/development/pbrt-v3/build/pbrt f10-1ac.pbrt
```

y got this in WSL

```

allan@DESKTOP-U95BU7I:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master-figures/figures$ ~/development/pbrt-v3/build/pbrt f10-iac.pbrt
pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores]
*** DEBUG BUILD ***
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [||||||||||||||||||||||||||||||||] (397.3s)
Statistics:
  BVH
    Interior nodes                                1
    Leaf nodes                                     2
    Primitives per leaf node                      3 /      2 (1.50x)
  Integrator
    Camera rays traced                           90000
  Intersections
    Regular ray intersection tests                44301789
    Shadow ray intersection tests                 33891195
    Ray-triangle intersection tests             9783147 / 19556362 (50.03%)
  Memory
    BVH tree                                      0.19 kB
    Film pixels                                    2.75 MiB
    Primitives                                     0.21 kB
    Texture MIP maps                             24.00 MiB
    TransformCache                                260.00 kB
    Triangle meshes                               0.34 kB
  Scene
    Lights                                         1
    Materials created                            2
    Shapes created                                3
    Probes per TransformCache lookup            1.500 avg [range 1 - 2]
    TransformCache hits                         0 /      6 (0.00%)
    Triangles per triangle mesh                  2 /      1 (2.00x)
  Texture
    EWA lookups                                   37573
    Trilinear lookups                            81356599

```

and tested with kd-tree

```

allan@DESKTOP-U95BU7I:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master-figures/figures$ ~/development/pbrt-v3/build/pbrt f10-iac_v2.pbrt
pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores]
*** DEBUG BUILD ***
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [||||||||||||||||||||||||||||] (414.5s)
Statistics:
  Integrator
    Camera rays traced                           90000
  Intersections
    Regular ray intersection tests                44301789
    Shadow ray intersection tests                 33891195
    Ray-triangle intersection tests             9783216 / 19556516 (50.03%)
  Memory
    Film pixels                                    2.75 MiB
    Primitives                                     0.21 kB
    Texture MIP maps                            24.00 MiB
    TransformCache                                260.00 kB
    Triangle meshes                               0.34 kB
  Scene
    Lights                                         1
    Materials created                            2
    Shapes created                                3
    Probes per TransformCache lookup            1.500 avg [range 1 - 2]
    TransformCache hits                         0 /      6 (0.00%)
    Triangles per triangle mesh                  2 /      1 (2.00x)
  Texture
    EWA lookups                                   37573
    Trilinear lookups                            81356599
allan@DESKTOP-U95BU7I:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master-figures/figures$ 

```

after zip and 2 tests



I followed this tutorial to install VM ubuntu on Windows host

<https://www.youtube.com/watch?v=x5MhydijWmc>

user allanvmubu

C:\Users\CAIPAD\VirtualBox VMs

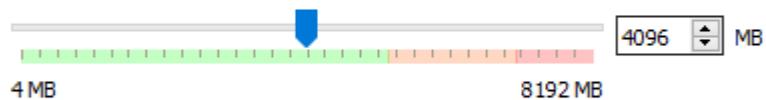
? X

← Create Virtual Machine

Memory size

Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.

The recommended memory size is **1024 MB**.

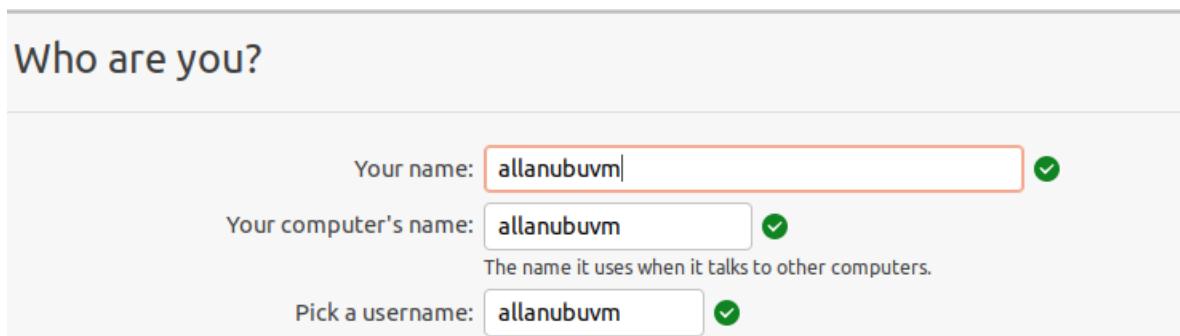
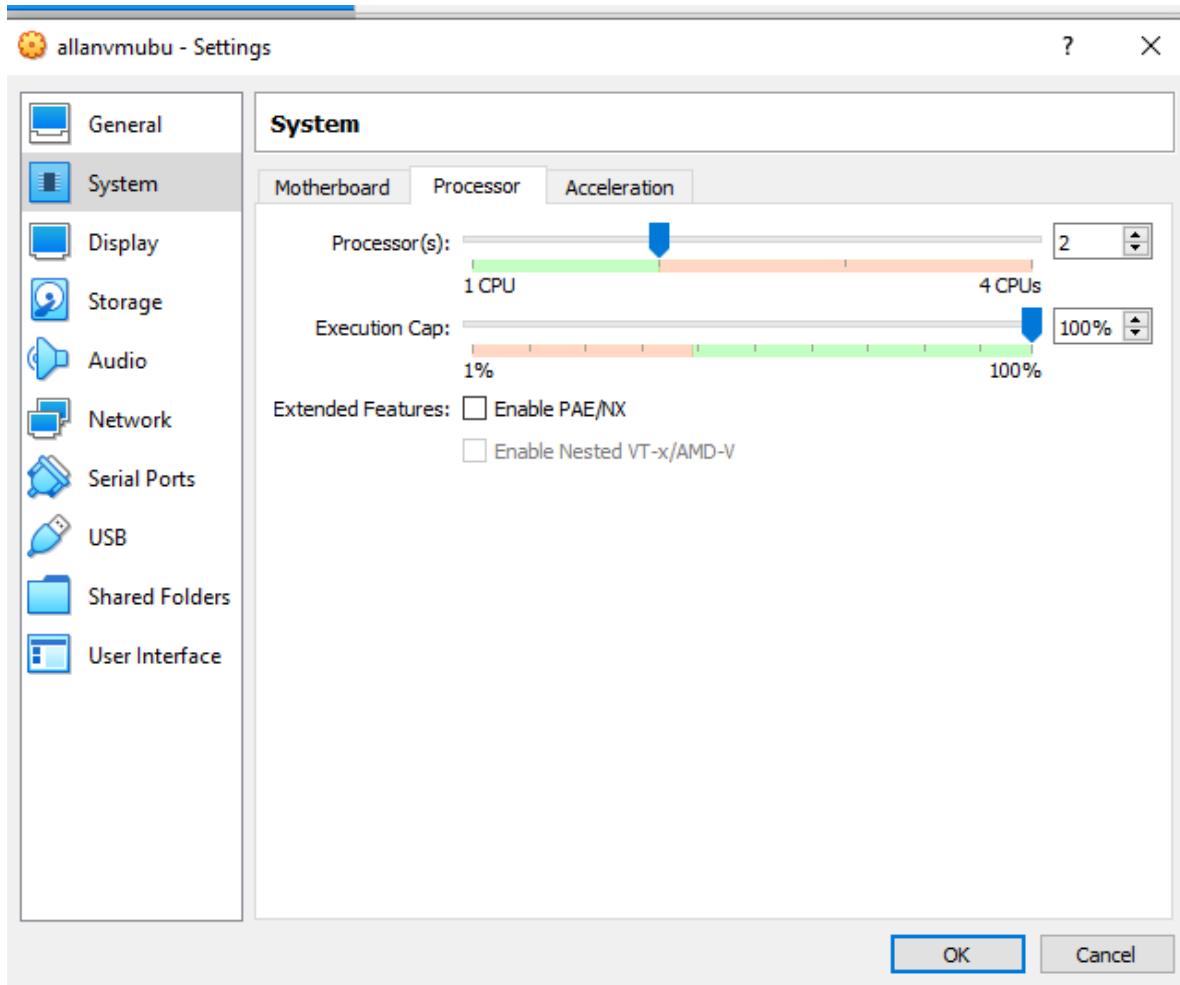


Next

Cancel

C:\Users\CAIPAD\VirtualBox VMs\allanvmubu\allanvmubu.vdi

20.13GB



1. `sudo apt install git`

```
sudo apt install build-essential
sudo apt update
git clone --recursive https://github.com/mmp/pbrt-v3/
```

```
09518  
allanubuvm@allanubuvm:~/Desktop/development$ cd pprt-v3  
bash: cd: pprt-v3: No such file or directory  
allanubuvm@allanubuvm:~/Desktop/development$ cd pbtt-v3  
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3$ ^C  
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3$ d build  
d: command not found  
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3$ mkdir build  
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3$ cd build  
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3/build$ cmake ../  
The C compiler identification is GNU 9.4.0
```

```
v3/build  
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3/build$ make  
Scanning dependencies of target pbtt  
[ 0%] Building CXX object CMakeFiles/pbtt.dir/src/core/api.cpp.o
```

and this gives the first VM ubuntu example

```
allanubuvm@allanubuvm:~/Desktop/development/pbtt-v3/scenes$ ~/Desktop/development/pbtt-v3/build/pbtt killeroo-simple.pbtt  
pbtt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores]  
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.  
The source code to pbtt (but *not* the book contents) is covered by the BSD License.  
See the file LICENSE.txt for the conditions of the license.  
Rendering: [oooooooooooooooooooooooooooo] (17.0s)  
Statistics:  
    BVH  
        Interior nodes  
        Leaf nodes  
        59188  
        59189
```

<https://www.youtube.com/watch?v=DC89AryJEE8>

24 May

Installing debian with

<https://www.youtube.com/watch?v=cx8GzudB6uE>

to use sudo user in debian

```
su --  
git clone --recursive https://github.com/mmp/pbtt-v3/  
git clone --recursive https://github.com/mmp/pbtt-v3/
```

<https://www.cyberithub.com/solved-package-has-no-installation-candidate-in-debian/>

kellero example in debian machine

/home/allandebianvm/Desktop/development/pbrt-v3/scenes#

/home/allandebianvm/Desktop/development/pbrt-v3/build/pbrt killeroo-simple.pbrt

```
root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3/scenes# /home/allandebianvm/Desktop/development/pbrt-v3/build/pbrt killeroo-simple.pbrt
pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores]
*** DEBUG BUILD ***
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [+++++++++++++++++++++++++++++++++++++] (136.6s)
Statistics:
    BVH
        Interior nodes          59188
```

For BHV Killero example we have, remember this data is for test

killero simple

int	Acc	Windows	WSL	ubuntu	VM ubuntu	VM debian
path	BHV	15.4-15.3	114.7		17.0	136.6
path	KD TREE	21.9-22.1				
directlighting	BHV	48.5-48.3				
directlighting	KD TREE	65.7-67.8				617.8

Fig 10 a c

int	Acc	Windows	WSL	ubuntu	VM ubuntu	VM debian
path	BHV	0.8-0.6				
path	KD TREE					
directlighting	BHV	72.8				
directlighting	KD TREE	77.2				

The other factor to change

Integrator "path"

Integrator "directlighting"

Accelerator "kd-tree"

C:\Users\CAIPAD\Desktop\maestria\DOE\proyecto2\developer\pbrt-v3\build\Release\pbrt.exe
killeroo-simple.pbrt

a performance guide line <https://github.com/vilya/minipbrt/blob/master/PERFORMANCE.md>

dataset <https://gitlab.com/zhoub/pbrt-v3-scenes/-/tree/master/cloud>

f3-18

```
See the source code to pbrt (but note the book content by is covered by the CC-B license).
See the file LICENSE.txt for the conditions of the license.
Rendering: [=====] (82.9s|440.1s) -
```

f7-19a vbh

```
See the file LICENSE.txt for the conditions of the license.
Rendering: [=====] (157.4s)
Statistics:
  BVH
  Leaf nodes
1
```

f7-19a kd-tree

```
THE SOURCE CODE TO pbrt (but *not* the book contents) IS COVERED BY THE BSD LICENSE.  
See the file LICENSE.txt for the conditions of the license.  
Rendering: [||||||||||||||||||||||||||||||||||||||||] (158.0s)  
Statistics:  
    Integrator  
        Camera rays traced  
        Intersections  
        4194304
```

f7-19b kd-tree

```
THE SOURCE CODE TO pbrt (but *not* the book contents) IS COVERED BY THE BSD LICENSE.  
See the file LICENSE.txt for the conditions of the license.  
Rendering: [||||||||||||||||||||||||||||||||] (54.8s)  
Statistics:  
    Integrator  
        Camera rays traced  
        65536
```

f7-19c kd-tree

```
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Rendering: [||||||||||||||||||||||||||||||||] (64.9s)  
Statistics:  
    Integrator  
        Camera rays traced  
        65536
```

f730-a kd-tree

```
-----  
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Rendering: [||||||||||||||||||||||||||||] (157.5s)  
Statistics:  
    Integrator  
        Camera rays traced  
        4194304
```

f7-34a bvh

```
See the file LICENSE.txt for the conditions of the license.  
Rendering: [||||||||||||||||||||||||||||] (60.5s)  
Statistics:  
    BVH
```

f8-22

```
See the file LICENSE.txt for the conditions of the license.  
Rendering: [ ] (40.8s|16023.4s)
```

f11-15

```
11-15.pbrt:50:6: Warning: Subsurface scattering material "subsurface" used, but "directlighting" integrator doesn't support subsurface scattering.  
se "path" or "volpath"  
11-15.pbrt:59:6: Warning: Subsurface scattering material "subsurface" used, but "directlighting" integrator doesn't support subsurface scattering.  
se "path" or "volpath".  
ndering: [ ] (59.3s|31649.9s)
```

killero gold

```
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See the file LICENSE.txt for the conditions of the license.  
Rendering: [+] ] (146.9s|10120.0s)
```

killero moving

```
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See the file LICENSE.txt for the conditions of the license.  
Rendering: [+++++++] ] (50.5s|677.3s)
```

Buddha pdf

```
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See the file LICENSE.txt for the conditions of the license.  
Rendering: [++++++++++++++++++++++++++++++++++++++++++++++++] (103.6s)  
Statistics:  
  BVH  
    Interior nodes 906225  
    Leaf nodes 906225
```

bupm shere

```
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See the file LICENSE.txt for the conditions of the license.  
Rendering: [+] ] (25.6s|1571.9s)
```

anim blue spheres

```
See the file LICENSE.txt for the conditions of the license.  
Rendering: [+] ] (26.6s|1637.2s)
```

room path

```
See the file LICENSE.txt for the conditions of the license.  
Rendering: [+] ] (42.5s|5192.7s)
```

tea pot area light

```
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Rendering: [++++++++++++++++++++++++++++++++++++++++++++++++] (8.9s)  
Statistics:  
  Integrator  
    Camera rays traced 540800
```

teapot metal

```
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Rendering: [+] ] (21.9s|1344.3s)
```

spotfog

```
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Rendering: [|||||] (41.3s|868.2s)
```

spheres-differentials-texfilt

```
:See the file LICENSE.txt for the conditions of the license.
:Rendering: [||||||||||||||||||||||||||||||||||||] (15.7s)
:Statistics:
:    BVH
:        Interior nodes          2
:        Leaf nodes             3
:        Primitives per leaf node 4 / 2 (1.22x)
```

miscquads

```
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Rendering: [++]
```

] (28.3s|2057.3s)

dof dragons

```
See the file LICENSE.txt for the conditions of the license.
Rendering: [||||||||||||||||||||||||] ] (157.8s|591.8s)
```

caustic-proj

```
See the file LICENSE.txt for the conditions of the license.
Rendering: [||||||||||||||||||||||||||||||||] (205.9s)
Statistics:
    BVH
        Interior nodes          1
```

because of caustic project, we decided to use resolution

caustic proj - kdtree

echo %date%-%time%

May 24

Sample 1 caustic proj - kdtree Debian VM 512 resolution

```
May 24 04:58
allandebianvm@allandebianvm: ~/Desktop/development/pbrt-v3-scenes
[ 47.5s|2165.6s ] "C
root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-scenes/simple# ./home/allandebianvm/Desktop/development/pbrt-v3-build/pbrt caustic-proj.pbrt
pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores]
P*** DEBUG BUILD ***
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
This source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [||||||||||||||||||||||||] (1952.8s)
Statistics:
    Intersections
        Regular ray intersection tests      246619455
        Subdivision ray intersection tests   54252767
        Ray-triangle intersection tests     131726433 / 657342032 (20.04%)
    Memory
        File pixels                      8.00 MiB
        Primitives                       0.21 kB
        SPPM Pixels                     24.24 MiB
        Textures and MIP maps            128.80 MiB
        TransformCache                   268.00 kB
        Triangle meshes                  0.31 kB
    Scene
        Lights                          1
        Materials created               2
        Shaders created
```

```
May 24 04:58
allandebianvm@allandebianvm: ~/Desktop/development/pbrt-v3-scenes
Light::Sample_*()                                9.03% ( 0:02:58.42)
SPPM camera pass                                7.50% ( 0:02:26.21)
Direct illumination                               6.98% ( 0:02:18.00)
MIPMaps::Lookup() (trilinear)                  6.49% ( 0:02:08.25)
Sampler::GetSample(l2l0D())
Accelerator::Intersect()
SPPM photon pass                                4.39% ( 0:01:26.78)
BSDF::Sample_f()
Camera::GenerateRay(Differential)()
SPPM grid construction                         4.14% ( 0:01:21.99)
HitableGrid::computeScatteringFunctions()
Triangle::IntersectP()
BSDF::f()
Other Shape::IntersectP()
Light::IntersectP()
BSDF::PDF()
Accelerator::IntersectP()
Sampler::StartPixelSample()
MIP map generation                            0.79% ( 0:00:13.34)
SPPM photon pass statistics update           0.38% ( 0:00:04.44)
Scene parsing and creation                    0.25% ( 0:00:04.98)
Integrator::Render()                           0.15% ( 0:00:02.99)
                                     0.02% ( 0:00:00.39)

root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date
root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date
Tue 24 May 2022 04:58:13 AM CST
root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date
Tue 24 May 2022 04:58:14 AM CST
root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple#
```

datos de Windows

Sample 9 caustic proj - kdtree Windows 512 res

Sample 11 caustic proj - bvh Windows 512 res

Sample 13 caustic proj - kdTree Windows 256 res

Sample 15 caustic proj - bvhWindows 256 res

```
C:\Users\CAIPAD\Desktop\maestria\DEI\proyecto2\developer>pbrt-v3\scenes\simple\echo %DATE%-%TIME%
Wed 05/25/2022 - 21:00:00.84

C:\Users\CAIPAD\Desktop\maestria\DEI\proyecto2\developer>pbrt-v3\scenes\simple>C:\Users\CAIPAD\Desktop\maestria\DEI\proyecto2\developer>pbrt-v3\scenes\simple
Short version [ 3 ] Built May 18 2022 at 22:17:54 [ Detected 4 cores ]
Copyright (c) 1998-2018 Matt Pharr, Greg Humphreys, and Renzo Jakob.
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Statistics:
  BVH
    -Interior nodes           1
    -Leaf nodes               2
    -Primitives per leaf node 3 /
    -Intersection tests       2 (1.5x)
  Intersections
    - regular ray intersection tests      61654776
```

Sample 17 tea pot - kdtree Windows 512 res

Sample 19 tea pot - byh Windows 512 res

Sample 10 caustic proj - kdtree Windows 512 res

Sample 12 caustic proj - bvh Windows 512 res

Sample 14 caustic proj - kdtree Windows 256 res

Sample 16 caustic proj - bvhWindows 256 res

Sample 18 tea pot - kdtree Windows 512 res

```
C:\Users\CAIPAD\Desktop\maestrial\DOE\project02\developer\pbrt-v3\scenes\simple>echo %date% %time%
Wed 05/29/2022 0:25:12.86

C:\Users\CAIPAD\Desktop\maestrial\DOE\project02\developer\pbrt-v3\scenes\simple>C:\Users\CAIPAD\Desktop\maestrial\DOE\project02\developer\pb
rt-v3\build\Release\pbrt.exe teapot-area-light.pbrt
Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Matt Jakob.
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rendering file PBRT.LICENSE for the conditions of the license.
rendering [*****] (33.5s)
***** Statistics:
***** Integrator:          0.000000 pvs traced
*****
```

Sample 20 tea pot - byh Windows 512 res

```
C:\Users\CAIPAD\Desktop\maestria\00E\proyecto2\developer\pbrt-v3\scenes\simple>echo %date% %time%
Wed 05/29/2022 10:26:26.99

C:\Users\CAIPAD\Desktop\maestria\00E\proyecto2\developer\pbrt-v3\scenes\simple>C:\Users\CAIPAD\Desktop\maestria\00E\proyecto2\developer\pbrt-v3\Build\Release\pbrt.exe teapot-area-light.pbrt
bndl version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores].
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Statistics: [*****] (28.6s)
Statistics:
  Bwd
    Interior nodes          1974
    Leaf nodes             1975
    Intersections per leaf node  2220 / 1000000 (1.8%)
```


<pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:08:05.96 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-1.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (41.0s) Statistics: Integrator Camera rays traced 2007152 </pre>	<pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:09:17.13 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-1.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (41.3s) Statistics: Integrator Camera rays traced 2007152 1.648 avg [range 0 - 5] </pre>
<p>Sample 35 killeroo - bvhWindows 512 res</p> <pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:13:38.87 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-2.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (27.7s) Statistics: BVH Interior nodes 59188 Leaf nodes 59189 </pre>	<p>Sample 36 killeroo - bvh Windows 512 res</p> <pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:13:55.43 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-2.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (28.1s) Statistics: BVH Interior nodes 59188 Leaf nodes 59189 </pre>
<p>Sample 37 killeroo - kdTree Windows 256 res</p> <pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:13:11.57 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-3.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (10.4s) Statistics: Integrator Camera rays traced 524288 Path length 1.648 avg [range 0 - 5] </pre>	<p>Sample 38 killeroo - kdTree Windows 256 res</p> <pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:13:08.99 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-3.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (10.4s) Statistics: Integrator Camera rays traced 524288 </pre>
<p>Sample 39 killeroo - bvh Windows 256res</p> <pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:14:59.04 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-4.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (7.5s) Statistics: BVH Interior nodes 59188 </pre>	<p>Sample 40 killeroo - bvhWindows 256 res</p> <pre>C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\scenes\needed\killeroo>echo %date%-%time% Thu 05/26/2022 - 3:14:00.58 C:\Users\CAIPAD\Desktop\maestria\DOE\projeto2\developer\pbrt-v3\build\Release\pbrt.exe killeroo-simple-4.pbrt pbrt version 3 (built May 18 2022 at 22:17:54) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (7.1s) Statistics: BVH Interior nodes 59188 </pre>

Data debianVM

<p>caustic proj - kdTree 512 res</p>  <pre>May 24 04:58 allandebianvm@allandebianvm: ~/Desktop/development/pbrt-v3/scenes/simple Rendering: [*****] (1952.8s) Statistics: Intersections Regular ray intersection tests 246619450 Adaptive ray intersection tests 5425276 Ray-triangle intersection tests 133726433 / 607342027 (28.04%) Memory Film pixels Primary 0.00 MB Secondary 24.00 MB SPPM Pixels Total 128.00 MB TransferCache Total 260.00 kB Uniform Cache Total 1.00 kB Scene Materials 1 Lights 1 Materials created 2 Objects created 4</pre>	<p>caustic proj - kdTree 512 res</p>  <pre>May 24 10:52 allandebianvm@allandebianvm: ~/Desktop/development/pbrt-v3/scenes/simple Rendering: [*****] (1912.8s) Statistics: Intersections Regular ray intersection tests 246619455 Scene parsing and creation Integrator :Render() 0.19% (0:00:03.70) 0.02% (0:00:00.37) Memory Film pixels Primary 0.00 MB Secondary 24.00 MB SPPM Pixels Total 128.00 MB TransferCache Total 260.00 kB Uniform Cache Total 1.00 kB Scene Materials 1 Lights 1 Materials created 2 Objects created 4</pre>
--	--

<p>caustic proj - bvh 512 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Wed 25 May 2022 10:29:11 AM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Tue 24 May 2022 04:57:37 AM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Tue 24 May 2022 04:58:14 AM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple#</pre>	<p>caustic proj - bvh 512 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Wed 25 May 2022 12:06:25 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date e#/home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (4778.1s) Statistics: BVH Interior nodes 1 . . . </pre>
<p>caustic proj - kd-tree 256 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Wed 25 May 2022 01:45:17 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# home e/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (1427.8s) Statistics: Intersections Regular ray intersection tests 61654777 Shadow ray intersection tests 13563226 Ray-triangle intersection tests 32929213 / 164337510 (20.04%) </pre>	<p>caustic proj - kd-tree 256 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Wed 25 May 2022 03:08:08 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# home e/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (1457.8s) Statistics: Intersections Regular ray intersection tests 61654777 </pre>
<p>caustic proj - bvh 256 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Wed 25 May 2022 03:37:03 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# home e/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (1262.9s) Statistics: BVH Interior nodes 1 Leaf nodes 2 Primitives per leaf node 3 / 2 (1.50x) </pre>	<p>caustic proj - bvh 256 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# date Wed 25 May 2022 04:42:23 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/simple# home e/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (1252.8s) Statistics: BVH Interior nodes 1 Leaf nodes 2 </pre>
<p>tea pot - kd-tree 512 res</p>	<p>tea pot - kd-tree 512 res</p> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/need d/simple# date Thu 26 May 2022 11:36:06 AM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/need d/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-are a-light-1.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (907.7s) Statistics: Integrator Camera rays traced </pre> <p>2130048</p>

<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 11:19:25 AM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-1.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (922.7s) Statistics: Integrator Camera rays traced</pre> <p style="text-align: right;">2130048</p>	
<h3>tea pot - bvh 512 res</h3>	<h3>tea pot - bvh 512 res</h3>
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 11:54:46 AM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-2.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (597.7s) Statistics: BVH Interior nodes</pre> <p style="text-align: right;">1974</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:06:42 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-2.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (592.7s) Statistics: BVH Interior nodes</pre> <p style="text-align: right;">1974</p>
<h3>tea pot - kdtree 256 res</h3>	<h3>tea pot - kdtree 256 res</h3>
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:27:47 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-3.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (226.6s) Statistics: Integrator Camera rays traced</pre> <p style="text-align: right;">540800</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:32:33 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-3.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (229.6s) Statistics: Integrator Camera rays traced</pre> <p style="text-align: right;">540800</p>
<h3>tea pot - bvh 256 res</h3>	<h3>tea pot - bvh 256 res</h3>
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:37:23 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-4.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (147.6s) Statistics: BVH Interior nodes</pre> <p style="text-align: right;">1974</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:40:43 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt teapot-area-light-4.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (149.6s) Statistics: BVH Interior nodes</pre> <p style="text-align: right;">1974</p>
<h3>sphere - kdtree 512 res</h3>	<h3>sphere - kdtree 512 res</h3>
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:47:10 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differential-textfil-1.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (233.6s) Statistics: Integrator Camera rays traced</pre> <p style="text-align: right;">1048576</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# date Thu 26 May 2022 12:53:17 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differential-textfil-1.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (233.7s) Statistics: Integrator Camera rays traced</pre> <p style="text-align: right;">1048576</p>

sphere - bvh 512 res	sphere - bvh 512 res
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# date Thu 26 May 2022 12:58:23 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differentials-texfilt-2.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (206.6s) Statistics: BVH Interior nodes </pre> <p style="text-align: right;">2</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# date Thu 26 May 2022 01:04:55 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differentials-texfilt-2.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (205.6s) Statistics: BVH Interior nodes </pre> <p style="text-align: right;">2</p>
killeroo0 - kdtree 256 res	killeroo kdtree 256 res
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# date Thu 26 May 2022 01:11:46 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differentials-texfilt-3.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (60.6s) Statistics: Integrator Camera rays traced Transformations </pre> <p style="text-align: right;">262144</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# date Thu 26 May 2022 01:13:52 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differentials-texfilt-3.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (60.6s) Statistics: Integrator Camera rays traced </pre> <p style="text-align: right;">262144</p>
killeroo - bvh 256 res	killeroo - bvh 256 res
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# date Thu 26 May 2022 01:16:41 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differentials-texfilt-4.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (52.6s) Statistics: BVH Interior nodes </pre> <p style="text-align: right;">2</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# date Thu 26 May 2022 01:21:25 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/simple# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt spheres-differentials-texfilt-4.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (53.6s) Statistics: BVH Interior nodes </pre> <p style="text-align: right;">2</p>
killeroo kdtree 512 res	killeroo kdtree 512 res
<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/killeroo# date Thu 26 May 2022 01:23:54 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo-simpe-1.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (334.7s) Statistics: Integrator Camera rays traced </pre> <p style="text-align: right;">2097152</p>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/killeroo# date Thu 26 May 2022 01:31:36 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needeed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo-simpe-1.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (332.7s) Statistics: Integrator Camera rays traced </pre> <p style="text-align: right;">2097152</p>
killeroo bvh 512 res	killeroo bvh 512 res

<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# date Thu 26 May 2022 01:38:01 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo -simple-2.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (209.6s) Statistics: BVH Interior nodes 59188</pre>	<pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# date Thu 26 May 2022 01:43:32 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo -simple-2.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (207.6s) Statistics: BVH Interior nodes 59188</pre>
<h2>killeroo kdtree 256 res</h2> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# date Thu 26 May 2022 01:48:39 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo -simple-3.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (85.6s) Statistics: Integrator Camera rays traced 524288</pre>	<h2>killeroo kdtree 256 res</h2> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# date Thu 26 May 2022 01:51:33 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo -simple-3.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (84.6s) Statistics: Integrator Camera rays traced 524288</pre>
<h2>killeroo bvh 256 res</h2> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# date Thu 26 May 2022 01:56:20 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo -simple-4.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (52.6s) Statistics: BVH Interior nodes 59188</pre>	<h2>killeroo bvh 256 res</h2> <pre>root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# date Thu 26 May 2022 01:56:20 PM CST root@allandebianvm:/home/allandebianvm/Desktop/development/pbrt-v3-/scenes/needed/killeroo# /home/allandebianvm/Desktop/development/pbrt-v3-/build/pbrt killeroo -simple-4.pbrt pbrt version 3 (built May 23 2022 at 21:42:54) [Detected 2 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (52.6s) Statistics: BVH Interior nodes 59188</pre>

Ubuntu data

caustic proj - kdtree 512 res		caustic proj - kdtree 512 res	
<pre>villanova@villanova-OptiPlex-5090:~/Desktop/Development/pbrt-v3/census/census\$ date Mar 24 May 2013 10:00 CST 2022 [villanova@villanova-OptiPlex-5090:~/Desktop/Development/pbrt-v3/census/census]\$./census pbrt version 3 [Built May 24 2022 at 20:17:26] [Detected 4 cores] Copyright (C) 1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book content) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Statistics: Intersections Regular ray intersection tests 246619455 Shadow ray intersection tests 59352777 Ray-triangle intersection tests 131726433 / 657341020 (20.04%) Memory</pre>		<pre>villanova@villanova-OptiPlex-5090:~/Desktop/Development/pbrt-v3/census/census\$ date Mar 24 may 20:58:57 CST 2022 [villanova@villanova-OptiPlex-5090:~/Desktop/Development/pbrt-v3/census/census]\$./census pbrt version 3 [Built May 24 2022 at 20:17:26] [Detected 4 cores] Copyright (C) 1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book content) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (169.5s) Statistics: Intersections Regular ray intersection tests 246619455 Shadow ray intersection tests 59352777</pre>	
caustic proj - bvh 512 res		caustic proj - bvh 512 res	
caustic proj - kdtree 256 res		caustic proj - kdtree 256 res	

tea pot - bvh 256 res	tea pot - bvh 256 res
<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:24:39 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt teapot-area-light-4.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (7.0s) Statistics: BVH Interior nodes 1974</pre>	<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:26:17 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt teapot-area-light-4.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (7.5s) Statistics: BVH Interior nodes 1974</pre>
sphere - kdtree 512 res	sphere - kdtree 512 res
<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:29:24 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt spheres-differentials-texfilt-1.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (9.5s) Statistics: Integrator Camera rays traced 1048576</pre>	<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:30:29 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt spheres-differentials-texfilt-1.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (9.0s) Statistics: Integrator Camera rays traced 1048576</pre>
sphere - bvh 512 res	sphere - bvh 512 res
<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:35:06 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt spheres-differentials-texfilt-2.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (8.0s) Statistics: BVH Interior nodes 2</pre>	<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:35:57 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt spheres-differentials-texfilt-2.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (8.0s) Statistics: BVH Interior nodes 2</pre>
sphere - kdtree 256 res	sphere - kdtree 256 res
<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:36:55 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt spheres-differentials-texfilt-3.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (2.35s) Statistics: Integrator Camera rays traced 262144</pre>	<pre>allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 04:37:58 CST 2022 allan@allan-Latitude-E6430s:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt spheres-differentials-texfilt-3.pbrt pbrt version 3 (built May 24 2022 at 20:17:26) [Detected 4 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (2.3s) Statistics: Integrator Camera rays traced 262144</pre>
sphere - bvh 256 res	sphere - bvh 256 res

Data ubuntu VM

caustic proj - kdtree 512 res	caustic proj - kdtree 512 res
<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/simple\$ date mar 24 may 21:56:44 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (265.6s) Statistics: Intersections Regular ray intersection tests 246619455 BVH Interior nodes 1</pre>	<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/simple\$ date mar 24 may 22:07:00 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (266.6s) Statistics: Intersections Regular ray intersection tests 246619455 BVH Interior nodes 1</pre>
caustic proj - bvh 512 res\	caustic proj - bvh 512 res
<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:03:08 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj-2.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (667.8s) Statistics: BVH Interior nodes 1</pre>	<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:18:36 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj-2.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (662.7s) Statistics: BVH Interior nodes 1</pre>
caustic proj - kdtree 256 res	caustic proj - kdtree 256 res
<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:32:32 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj-3.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (179.6s) Statistics: Intersections Regular ray intersection tests 61654777 BVH Interior nodes 1</pre>	<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:39:28 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj-3.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (179.6s) Statistics: Intersections Regular ray intersection tests 61654777 BVH Interior nodes 1</pre>
caustic proj - bvh 256 res	caustic proj - bvh 256 res
<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:43:23 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj-4.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (170.6s) Statistics: BVH Interior nodes 1</pre>	<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:47:17 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt caustic-proj-4.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (171.6s) Statistics: BVH Interior nodes 1</pre>
tea pot - kdtree 512 res	tea pot - kdtree 512 res
<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 may 09:54:38 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt teapot-area-light-1.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (101.6s) Statistics: Integrator Camera rays traced 2130048 Intersections</pre>	<pre>allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ date jue 26 May 09:57:09 CST 2022 allanubuvn@allanubuvn:~/Desktop/development/pbrt-v3/scenes/needed/simple\$ ~/Desktop/development/pbrt-v3/build/pbrt teapot-area-light-1.pbrt pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores] Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [] (98.6s) Statistics: Integrator</pre>
tea pot - bvh 512 res	tea pot - bvh 512 res


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allanubuvr@allanubuvr:~/Desktop/development/pbrt-v3/scenes/needed/killeroo$ date
jue 26 may 10:56:23 CST 2022
allanubuvr@allanubuvr:~/Desktop/development/pbrt-v3/scenes/needed/killeroo$ ~/Desktop/development/pbrt-v3/build/pbrt killeroo-simple-4.pbrt
pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores]
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
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See the file LICENSE.txt for the conditions of the license.
Rendering: [*****] (7.0s)
Statistics:
  BVH
    Interior nodes          59188

```



```

allanubuvr@allanubuvr:~/Desktop/development/pbrt-v3/scenes/needed/killeroo$ date
jue 26 may 11:01:24 CST 2022
allanubuvr@allanubuvr:~/Desktop/development/pbrt-v3/scenes/needed/killeroo$ ~/Desktop/development/pbrt-v3/build/pbrt killeroo-simple-4.pbrt
pbrt version 3 (built May 22 2022 at 21:16:50) [Detected 2 cores]
Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob.
The source code to pbrt (but *not* the book contents) is covered by the BSD License.
See the file LICENSE.txt for the conditions of the license.
Rendering: [*****] (7.0s)
Statistics:
  BVH
    Interior nodes          59188

```

data WSL

<h3>caustic proj - kdtree 512 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master/simple\$ date Tue May 24 11:25:04 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master/simple\$ ~/development/pbrt-v3/build/pbrt-caustic-project.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (4887.3s) Statistics: BVH Interior nodes 1 </pre>	<h3>caustic proj - kdtree 512 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master/simple\$ date Thu May 26 05:53:33 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/pbrt-v3-scenes-master/simple\$ ~/development/pbrt-v3/build/pbrt-caustic-project-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (4936.7s) Statistics: BVH Interior nodes 1 Leaf nodes 2 Primitives per leaf node 3 / 2 (1.50x) Intersections Regular ray intersection tests 246619455 </pre>
<h3>caustic proj - bvh 512 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ date Wed May 25 21:37:02 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt caustic-project-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (14887.3s) Statistics: BVH Interior nodes 1 </pre>	<h3>caustic proj - bvh 512 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 05:53:33 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt caustic-project-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (4936.7s) Statistics: BVH Interior nodes 1 Leaf nodes 2 Primitives per leaf node 3 / 2 (1.50x) Intersections Regular ray intersection tests 246619455 </pre>
<h3>caustic proj - kdtree 256 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 07:28:05 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt caustic-project-3.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (1442.5s) Statistics: Intersections Regular ray intersection tests 6165477 </pre>	<h3>caustic proj - kdtree 256 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 07:51:40 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt caustic-project-3.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (1433.3s) Statistics: Intersections Regular ray intersection tests 6165477 </pre>
<h3>caustic proj - bvh 256 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 07:28:05 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt caustic-project-4.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (1235.9s) Statistics: BVH Interior nodes 1 </pre>	<h3>caustic proj - bvh 256 res</h3> <pre> allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 07:51:40 CST 2022 allanubuvr@allanubuvr:~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt caustic-project-4.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (1238.8s) Statistics: BVH Interior nodes 1 Leaf nodes 2 </pre>

tea pot - kdtree 512 res	tea pot - kdtree 512 res
<pre>llling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 15:03:14 CST 2022 llling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-1.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (920.8s) Statistics: Integrator Camera rays traced 2130048 </pre>	<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 15:52:14 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-1.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (920.8s) Statistics: Integrator Camera rays traced 2130048 </pre>
tea pot - bvh 512 res	tea pot - bvh 512 res
<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 15:38:50 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (592.1s) Statistics: BVH Interior nodes 1974 </pre>	<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 15:56:17 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (590.7s) Statistics: BVH Interior nodes 1974 </pre>
tea pot - kdtree 256 res	tea pot - kdtree 256 res
<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:04:25 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-3.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (220.3s) Statistics: Integrator Camera rays traced 540000 </pre>	<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:09:17 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-3.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (225.2s) Statistics: Integrator Camera rays traced 540000 </pre>
tea pot - bvh 256 res	tea pot - bvh 256 res
<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:27:05 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-4.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (151.0s) Statistics: BVH Interior nodes 1974 </pre>	<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:32:17 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt teapot-area-light-4.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (149.8s) Statistics: BVH Interior nodes 1975 Leaf nodes 1975 </pre>
sphere- kdtree 512 res	sphere- kdtree 512 res
<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:47:44 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt spheres-differential-textfile-1.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (237.0s) Statistics: Integrator Camera rays traced 1048576 </pre>	<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:52:21 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt spheres-differential-textfile-1.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (239.2s) Statistics: Integrator Camera rays traced 1048576 Intersections 1 </pre>
sphere kdtree - bvh 512 res	sphere - bvh 512 res
<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:47:44 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt spheres-differential-textfile-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (211.1s) Statistics: BVH Interior nodes 2 </pre>	<pre>lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 16:52:21 CST 2022 lling@DESKTOP-US58U71:/~/development/pbrt-v3/scenes/needed/simple\$./development/pbrt-v3/build/pbrt spheres-differential-textfile-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (C)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [*****] (210.3s) Statistics: BVH Interior nodes 2 </pre>

sphere- kdtree 256 res	sphere kd-tree 256 res
<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 17:05:57 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt spheres-differential -texfile-3.pbrt port version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (59.9s) Statistics: Integrator Camera rays traced 262144</pre>	<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 17:05:12 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt spheres-differential -texfile-3.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (59.8s) Statistics: Integrator Camera rays traced 262144</pre>
sphere- bvh 256 res	sphere - bvh 256 res
<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 17:05:57 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt spheres-differential -bvh -texfile-4.pbrt port version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (52.7s) Statistics: BVH Interior nodes 2</pre>	<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ date Thu May 26 17:05:22 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/simple\$ ~/development/pbrt-v3/build/pbrt spheres-differential -bvh -texfile-4.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (52.8s) Statistics: BVH Interior nodes 2</pre>
killeroo kd-tree 512 res	killeroo kd-tree 512 res
<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:21:55 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-1.pbrt port version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (335.1s) Statistics: Integrator Camera rays traced 2897152 Interiors 0 Ray intersections 0 Ray tracing 0</pre>	<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:23:20 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-1.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (331.5s) Statistics: Integrator Camera rays traced 2897152</pre>
killeroo bvh 512 res	killeroo bvh 512 res
<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:21:55 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-2.pbrt port version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (209.2s) Statistics: BVH Interior nodes 59188 Leaf nodes 59189</pre>	<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:26:21 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-2.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (207.9s) Statistics: BVH Interior nodes 59188</pre>
killeroo kd-tree 256 res	killeroo kd-tree 256 res
<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:38:55 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-3.pbrt port version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (83.8s) Statistics: Integrator Camera rays traced 524288</pre>	<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:33:04 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-3.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (84.1s) Statistics: Integrator Camera rays traced 524288 Interiors 0 Ray intersections 0 Ray tracing 0</pre>
killeroo bvh 256 res	killeroo bvh 256 res
<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:35:13 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-4.pbrt port version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (52.6s) Statistics: BVH Interior nodes 59188 Leaf nodes 59189</pre>	<pre>allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ date Thu May 26 17:36:59 CST 2022 allen@DESKTOP-1958U1:/~/development/pbrt-v3/scenes/needed/killeroo\$ ~/development/pbrt-v3/build/pbrt killeroo-simple-4.pbrt pbrt version 3 (built May 22 2022 at 05:08:04) [Detected 4 cores] *** DEBUG BUILD *** Copyright (c)1998-2018 Matt Pharr, Greg Humphreys, and Wenzel Jakob. The source code to pbrt (but *not* the book contents) is covered by the BSD License. See the file LICENSE.txt for the conditions of the license. Rendering: [=====] (52.9s) Statistics: BVH Interior nodes 59188 Leaf nodes 59189</pre>

May 27

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