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## How to build a world with real image as ground plane

I want to simulate a world where its ground has special pattern. I decided to make a image file use Photoshop, and put this image into gazebo world as ground plane.



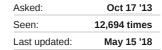
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Can anyone tell me how to do this?

Thanks a lot!

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## 3 Answers

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Update: Also check out this tutorial. 4

> You can create a material script, and then use that material script on a ground plane.



1. Create a new model directory:

mkdir ~/.gazebo/models/my\_ground\_plane

2. Create the materials directories:

mdkir -p ~/.gazebo/models/my ground plane/materials/textures mdkir -p ~/.gazebo/models/my ground plane/materials/scripts

3. Create your material script file

~/.gazebo/models/my\_ground\_plane/materials/scripts/my\_ground\_plane.material with the following contents:

```
material MyGroundPlane/Image
{
  technique
    pass
      ambient 0.5 0.5 0.5 1.0
      diffuse 1.0 1.0 1.0 1.0
      specular 0.0 0.0 0.0 1.0 0.5
      texture_unit
        texture MyImage.png
        filtering trilinear
    }
  }
```

- 1. Copy your image to ~/.gazebo/models/my\_ground\_plane/materials/textures/MyImage.png
- 2. Create a ~/.gazebo/models/my\_ground\_plane/model.sdf file with the following contents

```
<?xml version="1.0"?>
<sdf version="1.4">
<model name="my_ground_plane">
 <static>true</static>
   nk name="link">
```

```
<plane>
            <normal>0 0 1</normal>
            <size>100 100</size>
          </plane>
        </geometry>
        <surface>
          <friction>
            <ode>
              <mu>100</mu>
              <mu2>50</mu2>
            </ode>
          </friction>
        </surface>
     </collision>
     <visual name="visual">
        <cast_shadows>false</cast_shadows>
        <geometry>
          <plane>
            <normal>0 0 1</normal>
            <size>100 100</size>
          </plane>
        </geometry>
        <material>
          <script>
            <uri>model://my_ground_plane/materials/scripts/my_ground_plane.material</uri>
            <name>MyGroundPlane/Image</name>
          </script>
        </material>
     </visual>
    </link>
 </model>
</sdf>
```

3. Create a \( \tau/\).gazebo/models/my\_ground\_plane/model.config \( \text{file} \) with the following contents

<model> <name>My Ground Plane</name> <version>1.0</version> <sdf version="1.4">model.sdf</sdf>

```
<description>
 My textured ground plane.
</description>
```

</model>

4. In your world SDF file, use your ground plane like so:

```
<include>
  <uri>model://my_ground_plane</uri>
</include>
```

link **Comments** 

```
Thank you so much for this detailed and concise reply!
```

Paul ( Oct 18 '13 )

Hi nkoenig, can you tell me how to find the documentation of material. I don't know the meaning of ambient, diffuse and specular

Paul ( Oct 18 '13 )

I found a bug in your post Paul ( Oct 18 '13 )

I found a bug in your post

Paul ( Oct 18 '13 )

add a comment

<material> <script>

<uri>model://mygroundplane/materials/scripts/my\_ground\_plane.material</uri> <name>MyGroundPlane/Image</name> </script> </material>



There is a small bug.

excuse me , what do you mean by '4- In your world SDF file, use your ground plane like so:' . do you mean the file model.sdf? if so is there any specific location to put that : <include> <uri>model://my\_ground\_plane</uri> </iinclude> every time i try to load the resulted model gazebo freezes and exit



@Caesar84 I was able to place the image on the ground plane without the step 4 - including include spacewandererer (May 1'18)

add a comment

nkoenig's answer worked for me. But there wasn't any need for step 4 - Use ground plane using include tag



I also referred to another question for values of ambient, diffuse, specular ,emissive to ensure no squishing of image. Also used the fix mentioned in the answer.

Steps that worked for me:

- 1. Create a new model directory:
  - mkdir ~/.gazebo/models/my\_ground\_plane
- 2. Create the materials directories:

```
mdkir -p ~/.gazebo/models/my_ground_plane/materials/textures mdkir -p ~/.gazebo/models/my_ground_plane/materials/scripts
```

- 3. Create your material script file
  - ~/.gazebo/models/my\_ground\_plane/materials/scripts/my\_ground\_plane.material with the following contents:

- 4.Copy your image to
- ~/.gazebo/models/my\_ground\_plane/materials/textures/MyImage.png

## 5.Create a

~/.gazebo/models/my\_ground\_plane/model.sdf

file with the following contents

```
<mu>100</mu>
                     <mu2>50</mu2>
                  </ode>
               </friction>
            </surface>
         </collision>
         <visual name="visual">
            <cast_shadows>false</cast_shadows>
            <geometry>
               <plane>
                  <normal>0 0 1</normal>
                  <size>100 100</size>
               </plane>
            </geometry>
            <material>
               <script>
                  <uri>model://my_ground_plane/materials/scripts</uri>
                  <uri>model://my_ground_plane/materials/textures/</uri>
                  <name>MyGroundPlane/Image</name>
               </script>
            </material>
         </visual>
      </link>
   </model>
</sdf>
```

6.Create a

~/.gazebo/models/my\_ground\_plane/model.config file with the following contents

```
<?xml version="1.0" encoding="UTF-8"?>
<model>
    <name>My Ground Plane</name>
    <version>1.0</version>
    <sdf version="1.4">model.sdf</sdf>
    <description>My textured ground plane.</description>
</model>
```

7. Files I have created till now:

```
~/.gazebo/models/my_ground_plane/materials/scripts/my_ground_plane.material
~/.gazebo/models/my_ground_plane/materials/textures/MyImage.png
~/.gazebo/models/my_ground_plane/model.config
~/.gazebo/models/my_ground_plane/model.sdf
```

8.Open Gazebo and add my\_ground\_plane to add the new texture you defined to the Gazebo ground plane

9.If your floor comes up blinking grey when you insert it, it's because it's z-fighting with the default ground\_plane, just delete the ground plane and that should be fine.

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