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Beginner: GUI

User Interface

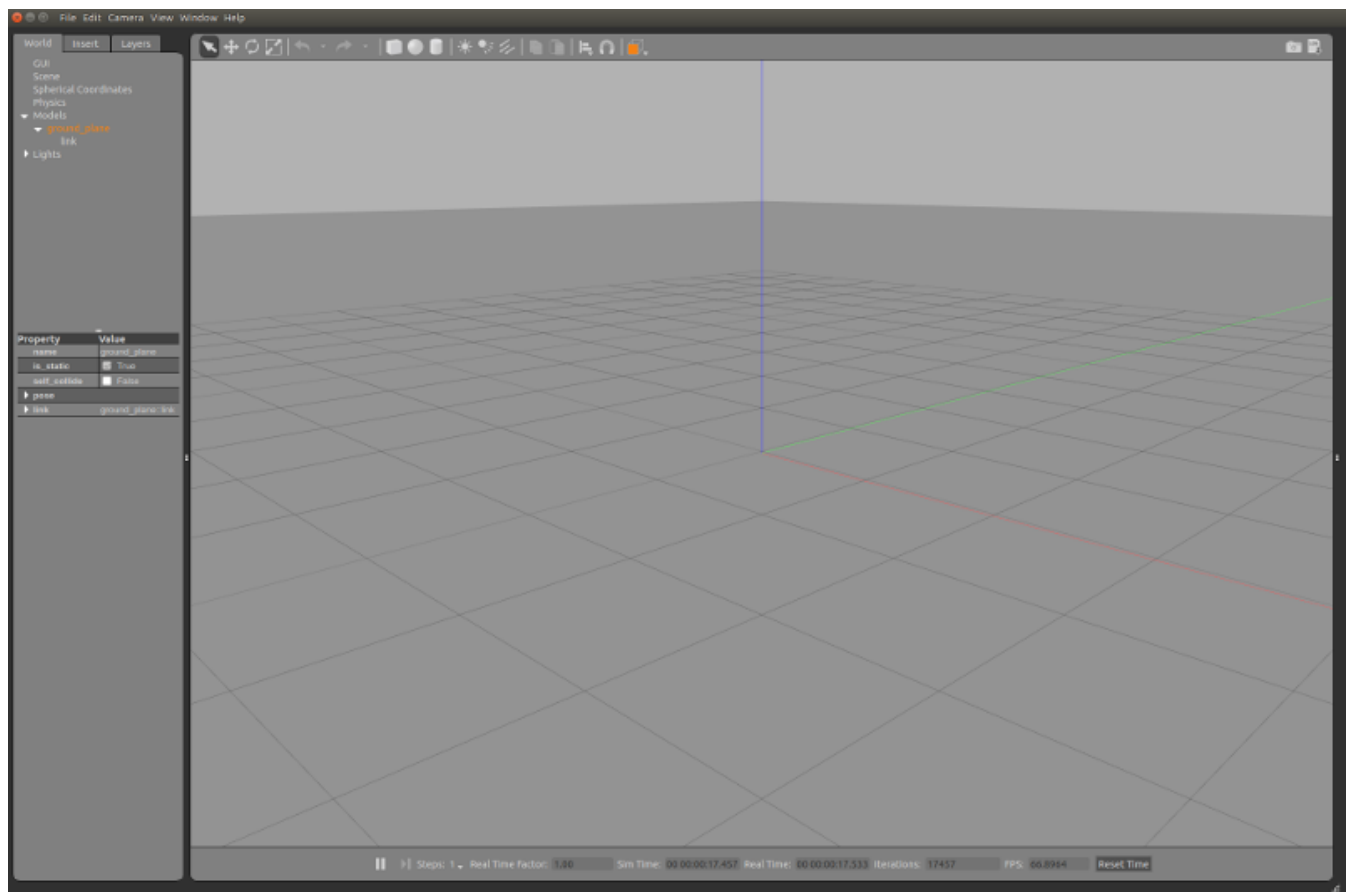
This is an introduction to the Gazebo Graphical User Interface, or GUI. We will learn interface basics like what the buttons do and how to navigate in the scene.

By now, you should have Gazebo installed (http://gazebo-sim.org/tutorials?cat=guided_b&tut=guided_b1&branch=ftu2).

Start by opening Gazebo. Press Alt-F2, type Gazebo, and then press Enter.

GUI

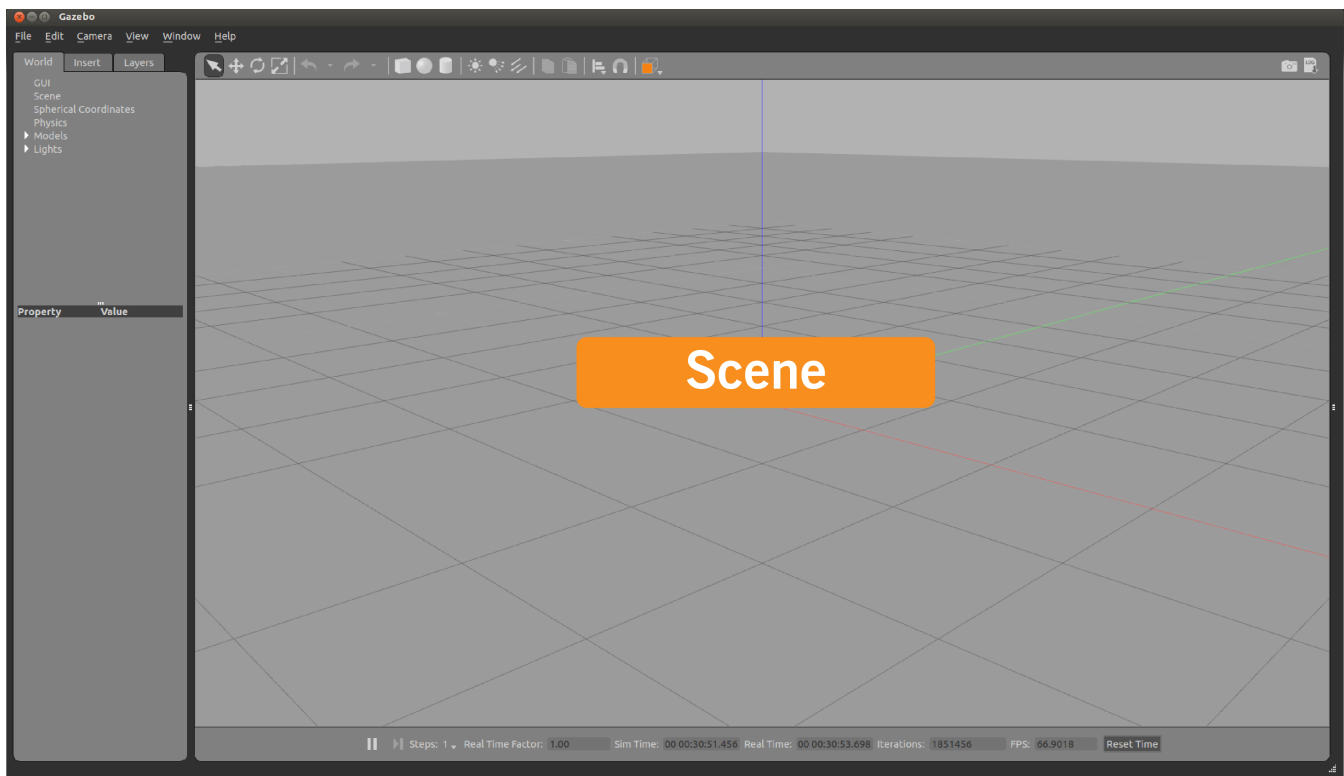
This is what you should see:



Note that the Gazebo interface consists of multiple sections, explained below.

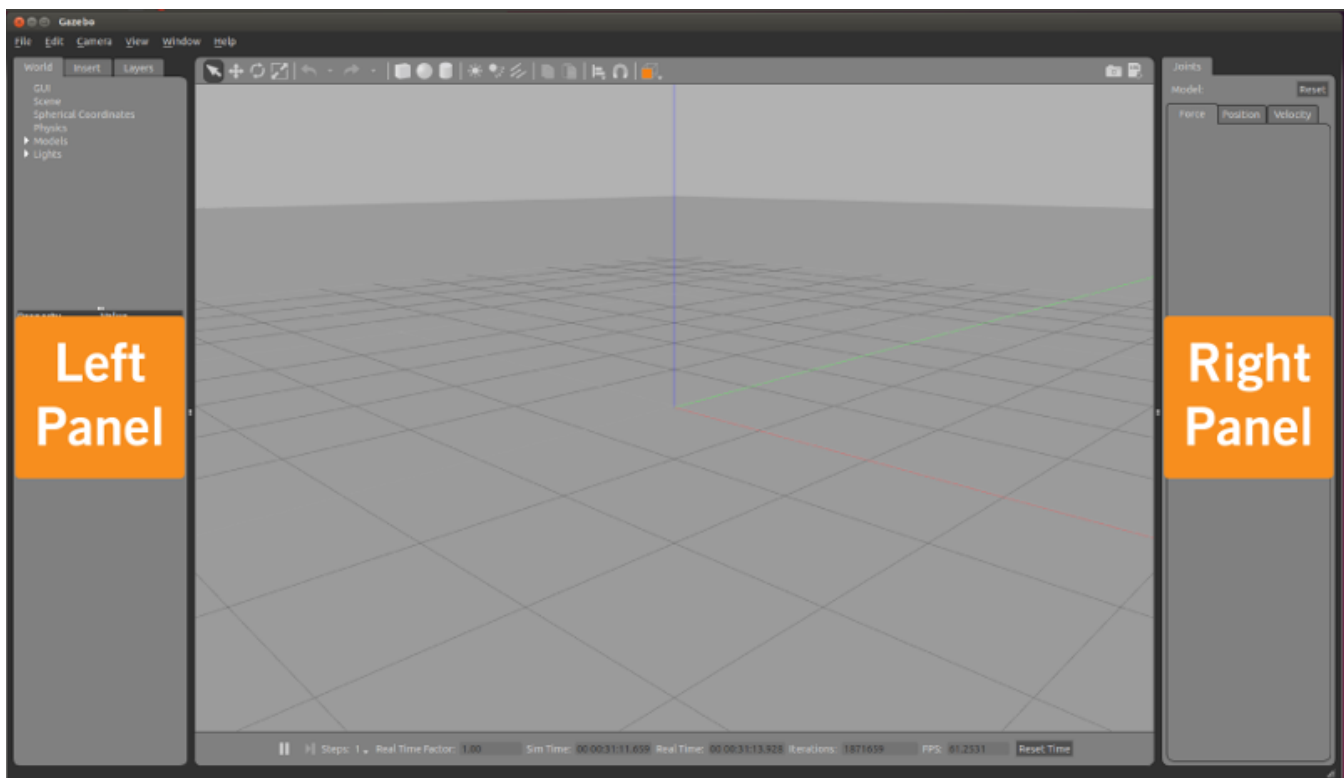
The Scene

The Scene is the main part of the simulator. This is where the simulated objects are animated and you interact with the environment.



The Panels

Both side panels—right and left—can be displayed, hidden or resized by dragging the bar that separates them from the Scene.



Left Panel

The left panel appears by default when you launch Gazebo. There are three tabs in the panel:

- **WORLD:** The World tab displays the models that are currently in the scene, and allows you to view and modify model parameters, like their pose. You can also change the camera view angle by expanding the "GUI" option and tweaking the camera pose.

- **INSERT:** The Insert tab is where you add new objects (models) to the simulation. To see the model list, you may need to click the arrow to expand the folder. Click (and release) on the model you want to insert, and click again in the Scene to add it.
- **LAYERS:** The Layers tab organizes and displays the different visualization groups that are available in the simulation, if any. A layer may contain one or more models. Toggling a layer on or off will display or hide the models in that layer.

This is an optional feature, so this tab will be empty in most cases. To learn more about Layers, check out the Visibility Layers (http://gazebosim.org/tutorials?tut=visual_layers&cat=build_robot) tutorial.

Right Panel (hidden by default)

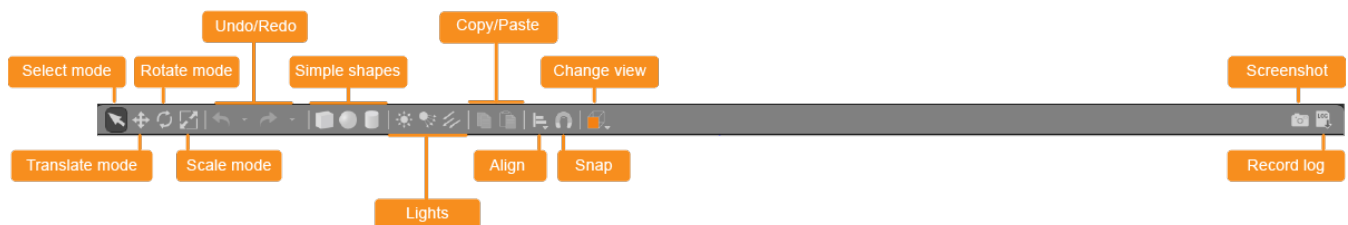
The right panel is hidden by default. Click and drag the bar to open it. The right panel can be used to interact with the mobile parts of a selected model (the joints). If there are no models selected in the Scene, the panel does not display any information.

The Toolbars

The Gazebo interface has two Toolbars. One is located just above the Scene, and the other is just below.

Upper Toolbar

The main Toolbar includes some of the most-used options for interacting with the simulator, such as buttons to: select, move, rotate, and scale objects; create simple shapes (e.g. cube, sphere, cylinder); and copy/paste. Go ahead and play around with each button to see how it behaves.



Select mode: Navigate in the scene

Translate mode: Select models you want to move

Rotate mode: Select models you want to rotate

Scale mode: Select models you want to scale

Undo/Redo: Undo/redo actions in the scene

Simple shapes: Insert simple shapes into the scene

Lights: Add lights to the scene

Copy/paste: Copy/paste models in the scene

Align: Align models to one another

Snap: Snap one model to another

Change view: View the scene from various angles

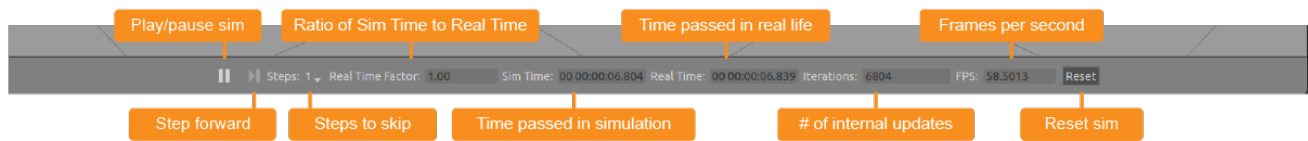
Bottom Toolbar

The Bottom Toolbar displays data about the simulation, like the simulation time and its

relationship to real-life time. "Simulation time" refers to how quickly time is passing in the simulator when a simulation is running. Simulation can be slower or faster than real time, depending on how much computation is required to run the simulation.

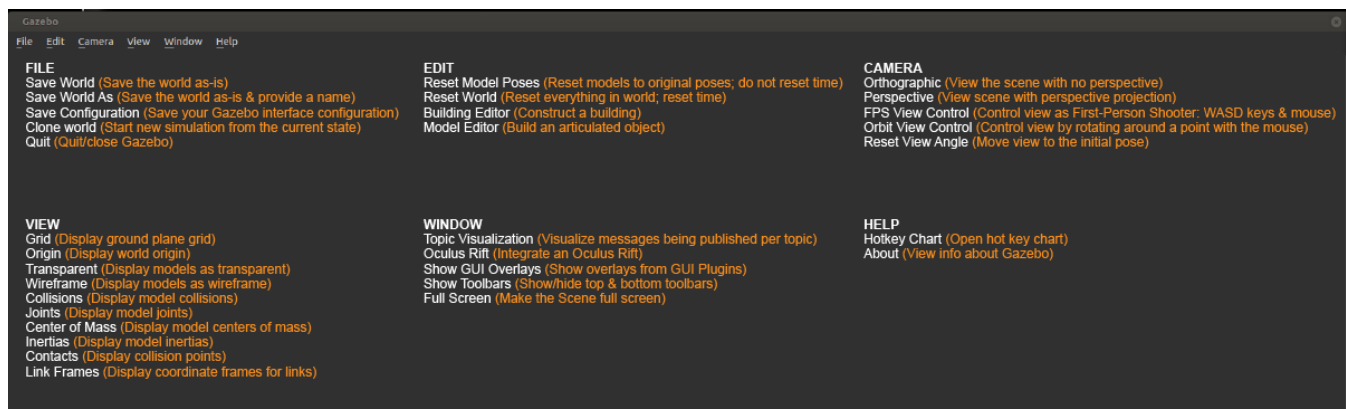
"Real time" refers to the actual time that is passing in real life as the simulator runs. The relationship between the simulation time and real time is known as the "real time factor" (RTF). It's the ratio of simulation time to real time. The RTF is a measure of how fast or slow your simulation is running compared to real time.

The state of the world in Gazebo is calculated once per iteration. You can see the number of iterations on the right side of the bottom toolbar. Each iteration advances simulation by a fixed number of seconds, called the step size. By default, the step size is 1 ms. You can press the pause button to pause the simulation and step through a few steps at a time using the step button.



The Menu

Like most applications, Gazebo has an application menu up top. Some of the menu options are duplicated in the Toolbars or as right-click context menu options in the Scene. Check out the various menus to familiarize yourself.



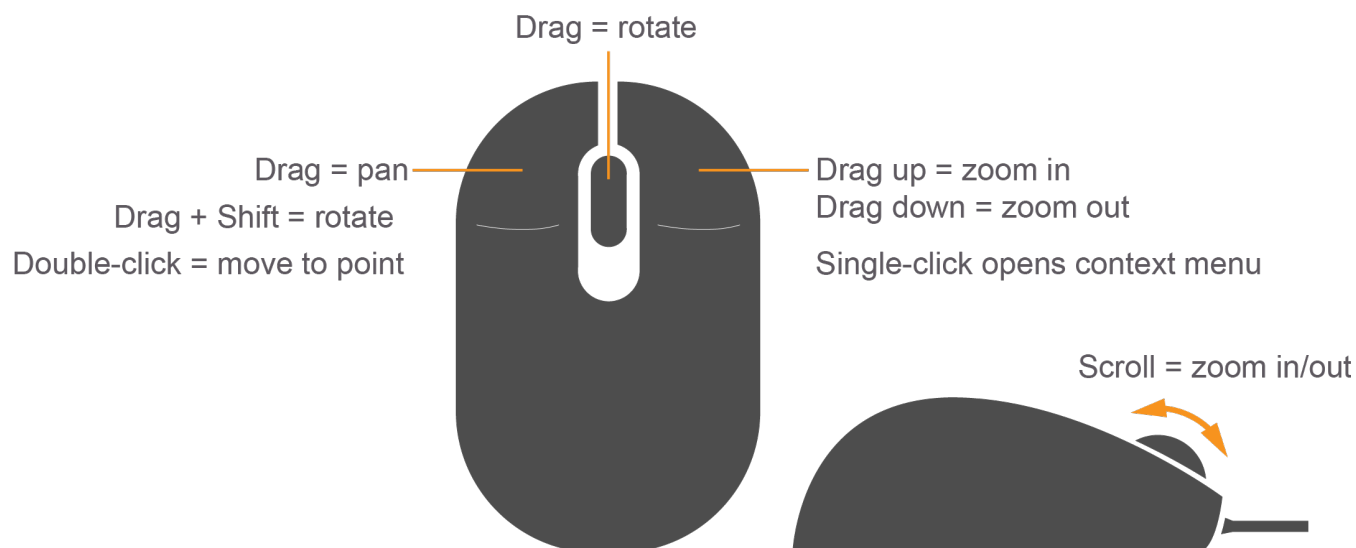
NOTE: Some Linux desktops hide application menus. If you don't see the menus, move your cursor to the top of the application window, and the menus should appear.



Mouse Controls



The mouse is very useful when navigating in the Scene. We highly recommend using a mouse with a scroll wheel. Below are the basic mouse operations for navigating in the Scene and changing the view angle.

Right-clicking on models will open a context menu with various options. Right-click on a model now to see what's available.



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