

# Ardupilot Gazebo Plugin & Models

---

## Requirements :

Ubuntu Xenial (16.04 LTS)

Ardupilot with Build Environment Setup for Ubuntu:

```
http://ardupilot.org/dev/docs/building-setup-linux.html#building-setup-linux
```

Gazebo version 7.0 (Installation Instructions Below)

## Getting Started :

---

### How to Install :

Method 1: Full ROS Kinetic Installation (Recommended):

Follow instructions here: <http://wiki.ros.org/kinetic/Installation/Ubuntu>

Method 2: Gazebo 7 Standalone:

Follow instructions here: [http://gazebo-sim.org/tutorials?tut=install\\_ubuntu](http://gazebo-sim.org/tutorials?tut=install_ubuntu)

Install Development Files:

```
sudo apt-get install libgazebo7-dev
```

Setup Project:

```
git clone https://github.com/BAmercury/ardupilot_gazebo
cd ardupilot_gazebo
git checkout gazebo7-ver
mkdir build
cd build
cmake ..
make -j4
sudo make install
```

Note that there is a confirmed ROS glitch that mismatches the Gazebo 7 plugin path. After running make install, run the following line:

```
sudo cp -a /usr/lib/x86_64-linux-gnu/gazebo-7.0/plugins/ /usr/lib/x86_64-linux-gnu/gazebo-7/
```

## Environmental Variable Setup:

Edit the bashrc file:

```
pico ~/.bashrc
```

Add the following at the end of .bashrc file:

```
source /usr/share/gazebo/setup.sh

export GAZEBO_MODEL_PATH=~/Documents/ardupilot_gazebo/gazebo_models

export
GAZEBO_RESOURCE_PATH=~/.ardupilot_gazebo/gazebo_worlds:${GAZEBO_RESOURCE_PATH}

export PATH=$PATH:$HOME/ardupilot/Tools/autotest
export PATH=/usr/lib/ccache:$PATH
```

## How to Launch:

Open two terminal windows

### Terminal 1: Launch Gazebo World

#### With Visualization:

For static target:

```
gazebo --verbose iris_irlock_demo.world
```

For moving target:

```
gazebo --verbose iris_irlock_rail_sim.world
```

#### Without Visualization:

For static target:

```
gzserver --verbose iris_irlock_demo.world
```

For moving target:

```
gzserver --verbose iris_irlock_rail_sim.world
```

## Terminal 2: Launch Ardupilot SITL:

In your Ardupilot repo, navigate to:

```
Tools/autotest/
```

Then run the following:

```
sudo python sim_vehicle.py -v ArduCopter -f gazebo-iris --console
```

Wait a few minutes and let the drone get a 3D fix before

## Log Files:

Go to your Ardupilot repository

Binary Logs will be located in:

```
/Tools/autotest/logs/
```

## Iris Drone Parameter File:

Go to your Ardupilot repository

Params for the drone can be customized by editing the following file:

```
/Tools/autotest/default_params/gazebo-iris.parm
```