# Drone Development

## Setup : Ubuntu

sudo apt-get install python3-pip

sudo pip3 install virtualenv

virtualenv venv

Active your virtual environment:

source venv/bin/activate

To deactivate:

deactivate

* (python36)>>>pip install mavproxy
* (python36)>>> (python36)pip install dronekit
* (python36)>>>pip install dronekit-sitl

## Start

* (python36)>>>dronekit-sitl copter --home=35.9835973,-95.8742309,0,180

180

os: linux, apm: copter, release: stable

Downloading SITL from http://dronekit-assets.s3.amazonaws.com/sitl/copter/sitl-linux-copter-3.3.tar.gz

Download Complete.

Payload Extracted.

Ready to boot.

Execute: /home/devuser/.dronekit/sitl/copter-3.3/apm --home=35.9835973,-95.8742309,0,180 --model=quad -I 0

SITL-0> Started model quad at 35.9835973,-95.8742309,0,180 at speed 1.0

SITL-0.stderr> bind port 5760 for 0

Starting sketch 'ArduCopter'

Serial port 0 on TCP port 5760

Starting SITL input

Waiting for connection ....

* Open another cmd
* mavproxy.py --master tcp:127.0.0.1:5760 --out udp:127.0.0.1:14551 --out udp:10.55.222.120:14550

4551 --out udp:10.55.222.120:14550

Connect tcp:127.0.0.1:5760 source\_system=255

Log Directory:

Telemetry log: mav.tlog

Waiting for heartbeat from tcp:127.0.0.1:5760

MAV> online system 1

STABILIZE> Mode STABILIZE

APM: Calibrating barometer

APM: Initialising APM...

APM: barometer calibration complete

APM: GROUND START

Init Gyro\*\*

INS

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G\_off: 0.00, 0.00, 0.00

A\_off: 0.00, 0.00, 0.00

A\_scale: 1.00, 1.00, 1.00

## Install Mission planer: ubuntu

1 Add the Mono repository to your system

Ubuntu 18.04 (i386, amd64, armhf, arm64, ppc64el)

* sudo apt install gnupg ca-certificates
* sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys 3FA7E0328081BFF6A14DA29AA6A19B38D3D831EF
* echo "deb https://download.mono-project.com/repo/ubuntu stable-bionic main" | sudo tee /etc/apt/sources.list.d/mono-official-stable.list
* sudo apt update

2 Install Mono

## sudo apt-get install mono-complete festival

Add yourself to dialout group on Ubuntu - be sure to replace username with your actual username in linux:

## sudo usermod -a -G dialout username

* wget <http://firmware.eu.ardupilot.org/Tools/MissionPlanner/archive/MissionPlanner-1.3.30.zip>

*Create folder and extract the zip file:*

* mkdir ~/missionplanner;unzip -d ~/missionplanner/ MissionPlanner-1.3.30.zip

*Launch Mission Planner:*

* cd ~/missionplanner;mono MissionPlanner.exe

## Install Mission planer: Windows

<http://ardupilot.org/planner/docs/mission-planner-installation.html>

### installation

zip file: <http://firmware.ardupilot.org/Tools/MissionPlanner/>

donload 1.3.49: <http://firmware.ardupilot.org/Tools/MissionPlanner/archive/MissionPlanner-1.3.49.zip>

### Working: windows

Install : <http://ardupilot.org/planner/docs/mission-planner-installation.html>

<https://www.youtube.com/watch?v=HD3c7sOHyx8>

1. start copter using

* >>>dronekit-sitl copter

Note down the port number – notice that it is a tcp port number localhost 127.0.0.1

1. Use mavproxy to sent the mavlink data from tcp to udp port (run cmd in administrator mode)

* >>> mavproxy.py --maste tcp:127.0.0.1:5760 --out 127.0.0.1:1450