



Mac

For most instances of missing packages and messages regarding uWebsockets, refer to Linux and Windows troubleshooting. Below are some common issues and their solutions.

- **.sh files not recognized on run:** Try `chmod a+x` for example `chmod a+x install-mac.sh`
- **missing `openssl`, `libuv`, or `cmake`:** `install-mac.sh` contains the line `brew install openssl libuv cmake`, which will not execute properly if `homebrew` is not installed. To determine if `homebrew` is installed, execute `which brew` in a terminal. If a path returns it is installed, otherwise you see `brew not found`. Follow the guidance [here](#) to install `homebrew`, then try running `install-mac.sh` again.
- If the step above does not resolve issues regarding `openssl`, please try the guidance provided [here], [here](#) and (<https://github.com/udacity/CarND-PID-Control-Project/issues/2>) and [here](#)
- **Issues with rootless mode in recent versions of OSX:** Some recent versions of OSX have a rootless mode by default that cause some install script commands to fail, even when running as root or sudo. To disable this reboot in recovery mode (`command+R`), and execute `csrutil disable` in a terminal. After this is complete, try running the install script.

After following these steps there may be some messages regarding makefile not found or can't create symbolic link to websockets. There is likely nothing wrong with the installation. Before doing any other troubleshooting make sure that build steps (10 and 11 from Windows and Linux instructions) have been executed from the top level of the project directory, then test the installation using running the code (step 12 from Windows and Linux instructions).

Tip regarding port forwarding when running code on vm and simulator on host

When using a virtual machine and running the simulator on the host machine, it is critical to set up port forwarding, as described [here](#).

[NEXT](#)