Main page
Recent changes
Random page
Help

Tools
What links here
Related changes
Special pages
Printable version

Permanent link
Page information

Page Discussion View source View history Search

Configuring OpenPilot

If you have a supported car and have correctly Installing Giraffe and Installing EON and Installing OpenPilot on the EON you should be able to boot OpenPilot, turn your car on, and your car should be detected and a drive should start. As you get going you will see your speed represented in MPH.

If your car is not yet supported by OpenPilot, you will still probably see the video, but you won't see your speed. Don't despair, as long as you have configured the switches properly (see Installing Giraffe) you will get all of the information you need on Cabana your CANBUS signals and figure out how to modify OpenPilot.

Contents [hide]

1 How to SSH to the EON

2 Switching to a different Fork/Branch

3 Git configs

4 Misc. Info

How to SSH to the EON

It is highly recommend you checkout a new community supported tool known as Workbench for finding your EON on your network, and connecting to it via SSH. It's also able to install different versions of openpilot, take screenshots of the screen, open android settings,

In order to login to your EON via SSH, use the following key:

----BEGIN PRIVATE KEY----MIIEvAIBADANBgkqhkiG9w0BAQEFAASCBKYwggSiAgEAAoIBAQC+iXXq30Tq+J5N Kat3KWHCzcmwZ55nGh6WggAqECa5CasBlM9VeR0pVu3beA+5h0MibRgbD4DMtVXB t6gEvZ8nd04E7eLA9LTZyFDZ7SkS0Vj4oX0QsT0GnJmKrASW5KslTWqVzTfo2XCt Z+004ikLxmyFeB08N0cErW1pa8gFdQDToH9FrA7kgysic/XVEST0oe7XlzRoe/eZ acEQ+jtnmFd21A4aEADkk00Ahjr0uKaJiLUAPatxs2icIXWpgYtfqqtaKF23wSt6 10Tu6cAwXb0Wr3m+IUSRU00IRzEIQS3z1jfd1svgzSgSSwZ1Lhj4AoKxIEAIc8qJ rO4uymCJAgMBAAECggEBAISFevxHGdoL3Z5xkw6oO5SQKO2GxEeVhRzNgmu/HA+q x80ryqD601CWY4037kft6iWxlwiLOdwna2P25ueVM3LxqdQH2KS4DmlCx+kq6FwC gv063fQPMhC9LpWimvaQSPEC7VUPjQlo4tPY6sTTYBU0h0A1ihRm/x7juKuQCWix Cq8C/DVnB1X4mGj+W3nJc5TwVJtgJbbiBrq6PWrhvB/3qmkxHRL7dU2SBb2iNRF1 LLY30dJx/cD73UDKNHrlrsjk3UJc29Mp4/MladKvUkRqNwlYxSuAtJV0nZ3+iFkL s3adSTHdJpClQer45R51rFDlVsDz2ZBpb/hRNRoGDuECgYEA6A1EixLq7QY0h3cb Xhyh3W4kpVvA/FPfKH10My30N0D/Y90a+M/wthW1wSoRL2n+uuIW50AhTIvIEivj 6bAZsTT3twrv0rvYu9rx9aln4p8BhyvdjeW4kS7T8FP5ol6Lo0t2sTP3T1L0uJP0 uQv0jlKPKIMh3c3RFNWTnGzMPa0CgYEA0jNiPLxP3A2nrX0keKDI+VHuv0Y88gdh 0W5BuLMLov0IDk9aQFIbBbMuW10TjHKv9NK+Lrw+YbCFq0Gf1dU/UN5gSyE8lX/Q FsUGUqUZx574nJZn0Icy30N0nQLcvHAQToLFAGUd7PWgP3CtHkt9hEv2koUwL4vo ikTP1u9Gkc0CgYEA2apoWxPZrY963XLKBxNQecYxNbLFaWg67t3rFnKm9E8BAICi 4zUaE5J1tMVi7Vi9iks9Ml9SnNyZRQJKfQ+kaebHXbkyAaPmfv+26rqHKboA0uxA nD0ZVwXX45zBkp6g1sdHxJx8JLoGEnkC9eyvSi0C//tRLx860hLErXwYcNkCf1it VMRKrWYoXJTUNo6tRhvodM88UnnIo3u3CALjhqU4uC1RTMHV4ZCGBwiAOb8GozSl s5YD1E1iKwEULloHnK6BIh6P5v8q7J6uf/xdqoKMjlWBHgq6/roxKvkSPA1D0Z3l jTadcgKFnRUmc+JT9p/ZbCxkA/ALFg8++G+0ghECgYA8vG3M/utweLvq4RI7l7U7 b+i2BajfK20mzNi/xugfeLjY6k2tfQGRuv6ppTjehtji2uvgDWkgjJUgPfZpir3I RsVMUiFgloWGHETOy0Qvc5AwtgTJFLTD1Wza2uBilSVIEsg6Y83Gickh+ej0mEsY 6co17RFaAZHwGfCFFj076Q== ----END PRIVATE KEY----

You can download the id_rsa key from the openpilot-tools repo, here With that key you can SSH in as root on port 8022. If you're using PuTTY, you'll need to convert that id_rsa (private key) into a .ppk (PuTTY Private Key)... no passwords needed.

Just save the above key as a text file, name it "eonkey.pem" or anything you like;

1) Under Unix/Linux environment, or Mac terminal, please run: \$ chmod 600 eonkey.pem (otherwise the system will think the text file is not safe).

2) To connect to your EON using this key, save the text above to a blank text file and name the file eonkey.pem. (Just make save it into the same working directory, to check using commands "pwd" and "ls".

Then get the IP address of your EON in settings under settings > wifi > advanced (please make sure your EON and your computer connect to the same WiFi).

3) To check your connection: \$ ping the EON IP address, like "ping 192.168.1.100"; please try a couple times until you see the data exchanging. like: "PING 192.168.2.1 (192.168.2.1): 56 data bytes 64 bytes from 192.168.2.1: icmp_seq=0 ttl=64 time=1.710 ms 64 bytes from 192.168.2.1: icmp_seq=1 ttl=64 time=13.899 ms"

4) Under a linux, MAC machine or PuTTY environment, use the command:

ssh root@(IP address of EON) -p 8022 -i eonkey.pem

like "\$ ssh root@192.168.1.100 -p 8022 -i eonkey.pem"

This is the same key in PuTTY ppk format:

PuTTY-User-Key-File-2: ssh-rsa Encryption: none Comment: imported-openssh-key Public-Lines: 6 AAAAB3NzaC1yc2EAAAADAQABAAABAQC+iXXq30Tq+J5NKat3KWHCzcmwZ55nGh6W ggAqECa5CasBlM9VeR0pVu3beA+5h0MibRgbD4DMtVXBt6gEvZ8nd04E7eLA9LTZ yFDZ7SkS0Vj4oX0QsT0GnJmKrASW5KslTWqVzTfo2XCtZ+004ikLxmyFeB08N0cE rW1pa8gFdQDToH9FrA7kgysic/XVESTOoe7XlzRoe/eZacEQ+jtnmFd21A4aEADk k00Ahjr0uKaJiLUAPatxs2icIXWpgYtfqqtaKF23wSt610Tu6cAwXb0Wr3m+IUSR U00IRzEIQS3z1jfd1svgzSgSSwZ1Lhj4AoKxIEAIc8qJr04uymCJ Private-Lines: 14 AAABAQCEhXr8RxnaC92ecZMOqDuUkCjthsRHlYUczYJrvxwPqsfDq8qq+jtQlmON N+5H7eolsZcIizncJ2tj9ubnlTNy8anUB9ikuA5pQsfpKuhcAoL90t30DzIQvS6V opr2kEjxAu1VD40Ja0LT20rE02AVDodANYoUZv8e47irkAlosQqvAvw1ZwdV+Jho /lt5yX0U8FSbYCW24ga6uj1g4bwf96ppMR0S+3VNkgW9ojURdSy2N9HScf3A+91A yjR65a7I5N1CXNvTKePzJWnSr1JEajcJWMUrgLSVdJ2d/ohZC7N2nUkx3SaQpUHg +OUedaxQ5VbA89mQaW/4UTUaBg7hAAAAgQDoDUSLEurtBg6HdxteHKHdbiSlW8D8 U98ofU4zLc404P9j05r4z/C2FbXBKhEvaf664hbk4CFMi8gSK+PpsBmxNPe3Cu86

opr2kEjxAu1VD40Ja0LT20rE02AVDodANYoUZv8e47irkAlosQqvAvw1ZwdV+Jho/lt5yX0U8FSbYCW24ga6uj1q4bwf96ppMR0S+3VNkgW9ojURdSy2N9HScf3A+91AyjR65a7I5N1CXNvTKePzJWnSr1JEajcJWMUrgLSVdJ2d/ohZC7N2nUkx3SaQpUHq+0UedaxQ5VbA89mQaW/4UTUaBg7hAAAAgQDoDUSLEurtBg6HdxteHKHdbiSlW8D8U98ofU4zLc404P9j05r4z/C2FbXBKhEvaf664hbk4CFMi8gSK+PpsBmxNPe3Cu86u9i72vH1qWfinwGHK92N5biRLtPwU/miXoug63axM/dPUs64k865C860Uo8ogyHdzdEU1Z0cbMw9rQAAAIEA0jNiPLxP3A2nrX0keKDI+VHuv0Y88gdh0W5BuLMLov0IDk9aQFIbBbMuW10TjHKv9NK+Lrw+YbCFq0Gf1dU/UN5gSyE8lX/QFsUGUqUZx574nJZn0Icy30N0nQLcvHAQToLFAGUd7PWgP3CtHkt9hEv2koUwL4voikTP1u9Gkc0AAACAPLxtzP7rcHi76uES05e102/otgWo3ytjpszYv8boH3i420pNrX0Bkbr+qaU43obY4trr4A1pIIyVID32aYq9yEbFTFIhYJaFhhxEzstEL30QMLakyRS0w9Vs2trgYpUlSBLI0mPNxonJIfnozphLGOnKNe0RWgGR8BnwhRYzu+k=Private-MAC: 2af7f5a599fa35e22392b7770a2eb7a0be8718b7

To use it in PuTTY, just be sure to reference that .ppk under... Connection > SSH > Auth > Private key for authentication

To set your timezone...

setprop persist.sys.timezone "US/Pacific"

...or whatever your timezone is.

Instead of working with above key files, one may also add the following single line into ~/.ssh/known_hosts

[192.168.43.1]:8022 ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBObmX06kATNtKj+x/Zk2gXkYzkE5St8j7kWhw07x6iiQZK8mK5VmANzHGNuTeInDZHh5sRJ/BcUqpYz1hI0WnMQ=

With this entry one can then log into EON without password via:

ssh -p 8022 192.168.43.1

Note: The Wifi tethering IP address of EON is 192.168.43.1. If EON is on home WIfi, replace 192.168.43.1. with appropriate address. If EON is connected via the smays Ethernet adapter, the IP address is 192.168.5.11.

Switching to a different Fork/Branch

Many users who are working on a non-default branch will want to switch OpenPilot to a different branch Note: Only required if you want to test code other than Comma's. To switch your git branch, this is the recommended procedure: SSH into EON, then...

cd /data
 mv openpilot openpilot.stock

3. git clone < Github URL>

4. cd openpilot

5. git checkout <desired_branch>6. git submodule update --init --recursive

6. git sub7. reboot

Note: The most common branches are 'release' and 'devel'. After the reboot, it can take up to 10 minutes to install the update. The Comma.ai github URL is https://gi

OpenPilot will need to rebuild a bunch of stuff after the reboot, so it'll take some extra time, sometimes up to 30 minutes. Be patient!

If your branch gets updated later, you can pull it like this, since rebooting alone won't necessarily work...

1. cd /data/openpilot; git pull; reboot

Git configs

If you'd like to make git edits from the EON, be sure to reset your git username and email address..

1. cd /data/openpilot

2. git config user.name "Mona Lisa"

3. git config user.email "MonaLisa@davinci.it"

You need to update this in the project, not your global git config, because your home directory is read-only.

Misc. Info

The OpenPilot software is started from /comma.sh from the init scripts in the root directory. It runs PYTHONPATH=/data/openpilot/selfdrive/manage.py under a tmux session, so you can attach to the tmux session to see what's going on. Beware that the tmux action key (usually b) has been remapped to ` (backtick) on NEOS.

OpenPilot logs sessions under /data/media/0/realdata/ in datestamped directories. The "rlog" log file is readable using the "capnp" tool, for example you can read the Event type messages with this command line: \$ capnp decode /data/openpilot/cereal/log.capnp Event < /data/media/0/realdata/datestamp/rlog | less

[Waking up the screen w/ a quick tap is necessary when initially connecting.]

If you use a SIM, and would like WiFi tethering auto-enabled at boot, add this to /data/data/com.termux/files/continue.sh...

service call wifi 37 i32 0 i32 1 # WifiService.setWifiApEnabled(null, true)

his is a really nice guide to OpenPilot internals

At this point your best bet is to visit #openpilot on slack.comma.ai and/or the forums

Privacy policy About comma wiki Disclaimers