

- 1.) Follow the instructions in the file [arm64 Debian Basic Install for Rock64](#) or [arm64 Debian Basic Install for PineH64B](#)  
A 16GB eMMC module is sufficient as the whole setup requires only 2.5GB in space when finished.
- 2.) Install sudo (log-in as root)  
  
`apt install sudo`  
  
`nano /etc/sudoers` scroll down to [User privilege specification](#)  
copy `root` for your specific username and save
- 3.) Reduce network speed to 100MBit and set network to static IP address  
  
`sudo apt install ethtool`  
  
`sudo nano /etc/network/interfaces`  
  
# This file describes the network interfaces available on your system  
# and how to activate them. For more information, see [interfaces\(5\)](#).  
  
source /etc/network/interfaces.d/\*  
  
# The loopback network interface  
auto lo  
iface lo inet loopback  
  
# The primary network interface  
auto eth0  
allow-hotplug eth0  
iface eth0 inet static  
    link-speed 100  
    link-duplex full  
    ethernet-autoneg off  
    address 192.168.1.xxx replace `xxx` with your relevant/desired subaddress  
    netmask 255.255.255.0  
    gateway 192.168.1.xxx  
    dns-nameservers 192.168.1.xxx  
  
`sudo nano /etc/resolv.conf`  
  
`nameserver 192.168.1.xxx` `xxx` should match your DNS Server
- 4.) Install system monitoring  
  
`sudo apt install hddtemp lm-sensors glances htop screenfetch`  
  
`sudo nano /etc/glances/glances.conf` comment / uncomment various sections  
  
`sudo nano /lib/systemd/system/glances.service`  
  
[Unit]  
Description=Glances  
After=network.target  
  
[Service]  
ExecStart=/usr/bin/glances -w  
Restart=on-abort  
  
[Install]  
WantedBy=multi-user.target  
  
`sudo systemctl status glances.service` pressing 'q' returns to console

`sudo reboot` to restart the machine and all systemd services,  
once machine is up again check `192.168.1.xxx:61208`  
if glances is running correctly.  
`sensors` shows all data gathered by lm-sensors  
`glances` shows a variety of system/machine data which can be  
configured by changing `nano /etc/glances/glances.conf`

## 5.) Install GPS Software

`sudo apt install gpsd`

`sudo dpkg-reconfigure gpsd`

`sudo nano /lib/systemd/system/gpsd.socket`

change `ListenStream=127.0.0.1:2947` to `ListenStream=0.0.0.0:2947`

`sudo nano /etc/default/gpsd`

`START_DAEMON="true"`

`USB_AUTO="true"`

`DEVICES="/dev/ttyXYZ"`

check with `ls /dev/` for correct device and replace XYZ  
with `AMA0` or `ACM0` or `USB0` as appropriate.

`GPSD_OPTIONS="-n"`

`GPSD_SOCKET="/var/run/gpsd.sock"`

`sudo systemctl enable gpsd`

`sudo systemctl start gpsd`

`sudo systemctl status gpsd`

`sudo reboot`

Use `cgps` or `gpsmon` to check GPS data and position.

## 6.) Install FlightAware Software

`sudo apt install git debhelper librtlsdr-dev pkg-config dh-systemd libncurses5-dev libbladerf-dev`

`sudo apt install libhackrf-dev liblimesuite-dev tcl8.6-dev python3-dev python3-venv libz-dev`

`sudo apt install libboost-system-dev libboost-program-options-dev libboost-regex-dev`

`sudo apt install libboost-filesystem-dev`

`mkdir flightaware`

`cd flightaware`

`git clone https://github.com/flightaware/dump1090.git`

`cd dump1090`

`sudo dpkg-buildpackage -b --no-sign`

`cd ..`

`sudo apt install /home/user/flightaware/dump1090-fa_X.0_arm64.deb`

`sudo apt install /home/user/flightaware/dump1090-fa-dbgSYM_X.0_arm64.deb`

`sudo systemctl enable dump1090-fa`

`sudo systemctl start dump1090-fa`

`sudo systemctl status dump1090-fa`

`git clone https://github.com/flightaware/piaware_builder.git`

`cd piaware_builder`

`./sensible-build.sh buster`

`cd package-buster`

```
sudo dpkg-buildpackage -b --no-sign
```

```
sudo apt install /home/user/flightaware/piaware_builder/piaware_X.0_arm64.deb
```

```
sudo apt install /home/user/flightaware/piaware_builder/piaware-dbgsym_X.0_arm64.deb
```

```
sudo systemctl enable piaware
```

```
sudo systemctl start piaware
```

```
sudo systemctl status piaware
```

```
sudo reboot
```

```
sudo piaware-config allow-auto-updates yes
```

```
sudo piaware-config allow-manual-updates yes
```

```
sudo piaware-config feeder-id XXXXX
```

replace **X** with Unique Identifier  
found on FlightAware web site.

7a.) Optional, install tar1090 web interface

```
sudo bash -c "$(wget -q -O - https://raw.githubusercontent.com/wiedehopf/tar1090/master/install.sh)"
```

```
sudo nano /usr/local/share/tar1090/html/config.js
```

 Amend web interface if needed

7b.) Optional, install Dump1090-OpenLayers3 mod

```
git clone https://github.com/alkissack/Dump1090-OpenLayers3-html.git
```

```
cd /usr/share/dump1090-fa
```

```
sudo cp -R html original-html
```

```
sudo rm -R -f html
```

```
cd /home/user/Dump1090-OpenLayers3-html
```

```
sudo cp -R public_html /usr/share/dump1090-fa/html
```

```
cd /usr/share/dump1090-fa/html
```

```
sudo nano config.js
```

Amend DefaultZoomLvl, SiteLat, SiteLon,  
ShowMouseLatLong, ShowMaxRange.

```
sudo cp -R config.js /usr/share/dump1090-fa/config.js
```

```
sudo reboot
```

8.) Console auto log-in and Glances start at boot/log-in

```
nano /home/user/.bashrc
```

add glances to the **END** of file

```
sudo nano /etc/systemd/logind.conf
```

uncomment #NAutoVTs=6 and set to NAutoVTs=2

```
sudo mkdir /etc/systemd/system/getty@tty1.service.d
```

```
sudo nano /etc/systemd/system/getty@tty1.service.d/override.conf
```

```
[Service]
```

```
ExecStart=
```

```
ExecStart=-/usr/sbin/agetty --autologin user --noclear %I $TERM
```

```
sudo systemctl enable getty@tty1
```

```
sudo reboot
```

Done, enjoy your new ADSB receiver !