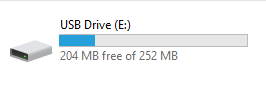
# Document on how to create SD card image from source code

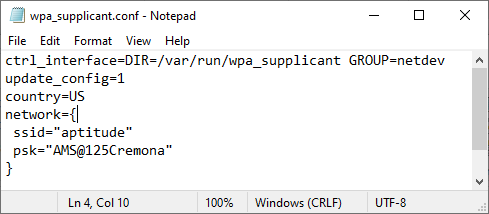
1. Insert microSD card to a card reader.
2. Open Raspberry Pi Imager v1.4. Select ‘RASPBERRY PI OS LITE (32-BIT)’ for the operating system, select the microSD card just inserted for the ‘SD Card’, then click ‘Write’



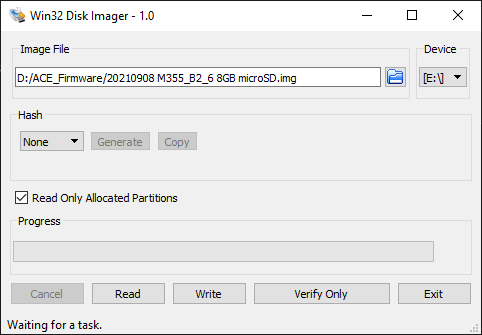
1. When write is done, unplug the SD card and re-insert the SD card to the card reader.
2. A new drive will be shown in Windows Explorer.



1. Place the file “ssh” and “wpa\_supplicant.conf” to the drive. This is to enable the wireless connection on the Pi to make the following setup steps easier.
2. Edit the “wpa\_supplicant.conf” with notepad. Replace the ssid and psk with the wireless network SSID and password that is available.



1. Unplug the SD card. Insert the SD card to the SD card slot of a Raspberry Pi Zero W.
2. Power up the RPi by connecting a micro-USB power cable to the PWR micro-USB connector on the RPi.
3. Remotely connect to the Raspberry Pi with SSH. Make sure the PC is also connected to the same wireless network as Raspberry Pi. Open a terminal window, type in: ssh [pi@raspberrypi.local](mailto:pi@raspberrypi.local).
4. Type in the default password is ‘rasperry’ when prompt for password.
5. Install git by type in the following command `sudo apt install git –y`.
6. Type in the following commands: wait to finish after each command.
   * Cd /
   * sudo git config --global credential.helper store
   * sudo git clone <https://github.com/AptitudeCodebase/covid_sensor.git>
   * Username for 'https://github.com': AptitudeCodeBase
   * Password for 'https://AptitudeCodeBase@github.com': [user github token, gph\_ereoXXXXX]
   * Sudo git clone <https://github.com/rocksnow1942/ReaderImage_Setup.git>
   * cd ReaderImage\_Setup
   * sudo python3 install.py
   * Choose option 1
   * Now the script will install required libraries.
7. After all packages are installed, reboot RPi by type in ‘sudo reboot’
8. After the RPi reboot, use ssh to login to the RPi again.
9. Install and configure Apache2. Type in the following command in SSH.
   * sudo apt install apache2
   * sudo a2enmod proxy proxy\_http proxy\_ajp rewrite deflate headers proxy\_balancer proxy\_connect proxy\_html
   * sudo nano /etc/apache2/sites-available/000-default.conf
   * <VirtualHost \*:80>
   * ProxyPreserveHost On
   * ProxyPass / http://127.0.0.1:88/
   * ProxyPassReverse / http://127.0.0.1:88/
   * </VirtualHost>
   * Save the file by Ctrl+X then Enter.
   * sudo systemctl reload apache2
10. Run cleanup scripts before make the SD card image.
    * Cd /ReaderImage\_Setup
    * Sudo python3 install.py
    * Choose option 12. Clean up system for clone SD card
11. Power off the RPi and take out the SD card.
12. Insert SD card to SD card reader and connect to PC.
13. Open win32 – disk imager. Select the target SD card and enter the name of the image file to save. Click ‘Read’.



1. Wait until the image is created.
2. Shrink the image on PC running Ubuntu 18.04.
3. Use a virtual machine running Ubuntu 18.04 is recommended.
4. Copy the image file created to the Ubuntu machine.
5. Install the pishrink script by enter the following command in terminal:
   * wget https://raw.githubusercontent.com/Drewsif/PiShrink/master/pishrink.sh
   * chmod +x pishrink.sh
   * sudo mv pishrink.sh /usr/local/bin
6. Shrink the image by enter the following command in terminal:
   * Sudo pishrink.sh <filename of the original image file> <destination file name>
7. Copy the shrunk image file to desired storage location.