

Lesson 2 Write images to SD Card

1. Raspberry Pi Operation System Introduction

Raspberry Pi is a tiny computer which is also requires operation system. There are some Raspberry Pi operation systems introduced for your choice.

1) NOOBS

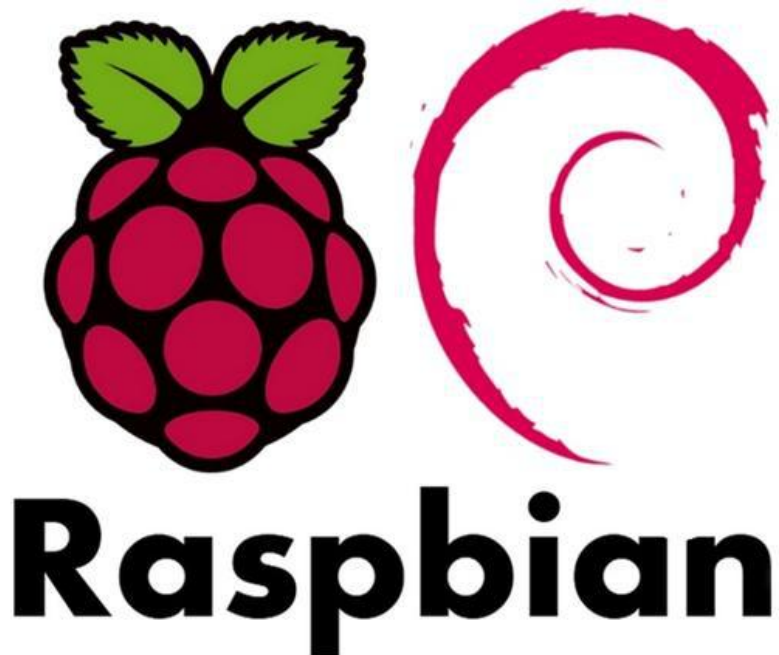
The official recommendation system “New Out of Box System” is a very easy user-friendly multi-system boot manager. It contains all the files of the operating system so that you can install the system directly without relying on the network. Do not forget to update the system after the installation is complete.



2) Raspbian

Raspbian is the most widely used and the first choice for the Raspberry Pi system. It is a version customized for ARM card computer Raspberry Pi with Debian. The system is very safe and stable which is suitable for novice and

expert.



3) Windows IoT Core

Windows IoT is the Internet of Things operating system under the Microsoft ecosystem, which has supported the Raspberry Pi since its released. However, it should be noted that this version is different from the previous Windows version, and the hardware is not limited to the x86 architecture, but can also run on the ARM architecture.



Windows 10 IoT Core

4) Ubuntu MATE

Ubuntu MATE is a version of Ubuntu, based on the desktop environment MATE, which is an official derivative of Ubuntu Linux. It is the latest platform for smart devices that can run the same software stored locally or dependent on the cloud.



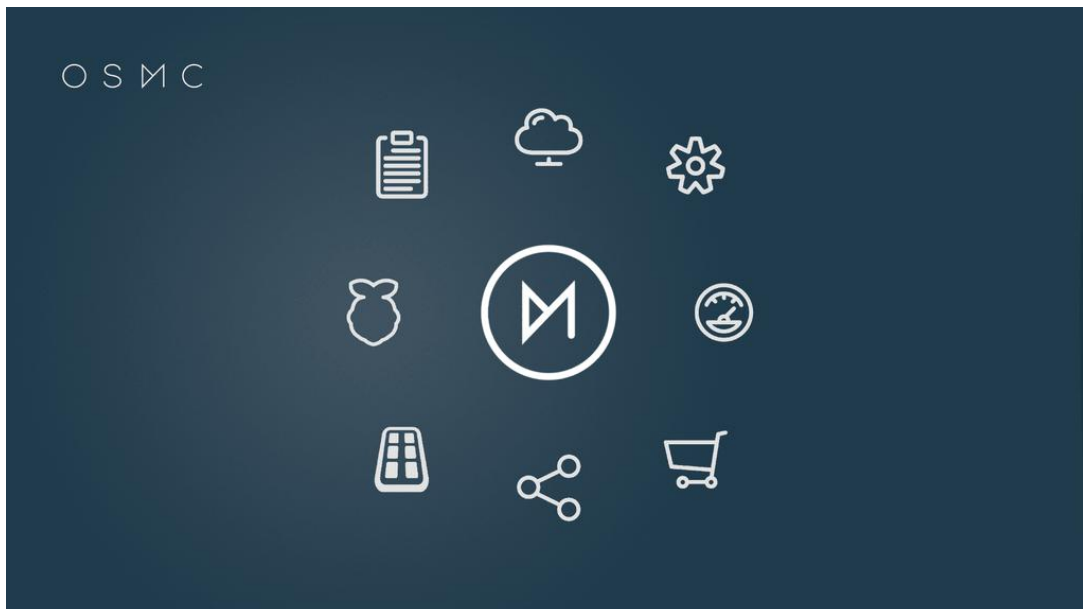
5) Kali Linux

Kali Linux is a Debian-based Linux distribution designed for digital forensics and penetration testing. Kali is pre-installed with a lot of penetration software so that users can run Kali Linux via hard disk, liveCD or live USB. There are 32-bit and 64-bit images, which can be used for the X86 instruction set, as well as images based on the ARM architecture.



6) OSMC

Open Source Media Center(OSMC) is an audio and video system officially recommended by the Raspberry Pi, which can play local and Internet resources. The purpose is to build a multimedia center (home high-definition TV broadcast platform) with the TV.



In the the following operated steps, we will take Raspbian as example.

2. Getting Ready

Step 1: Hardware:

- 1) Card reader



- 2) 32G SD card (prepare your SD card needs 8G or more)



- 3) A computer with internet

Step 2: Software:

- 1) SD Card Formatter (go to folder 5.Appendix/3.Tools/1. SD card formatting tool, click to install)



- 2) Image Burning Tool: Win32DiskImager (go to folder 5.Appendix/3.Tools/1. Image Burning tool, click to open)

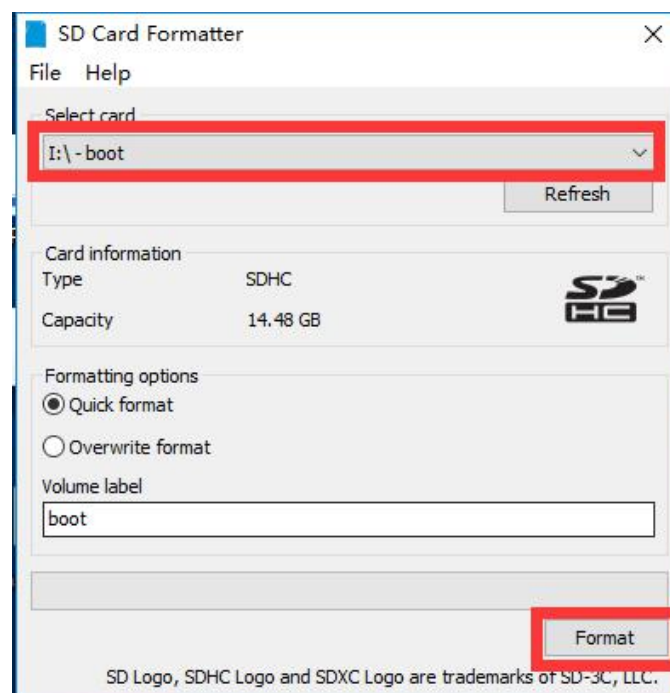


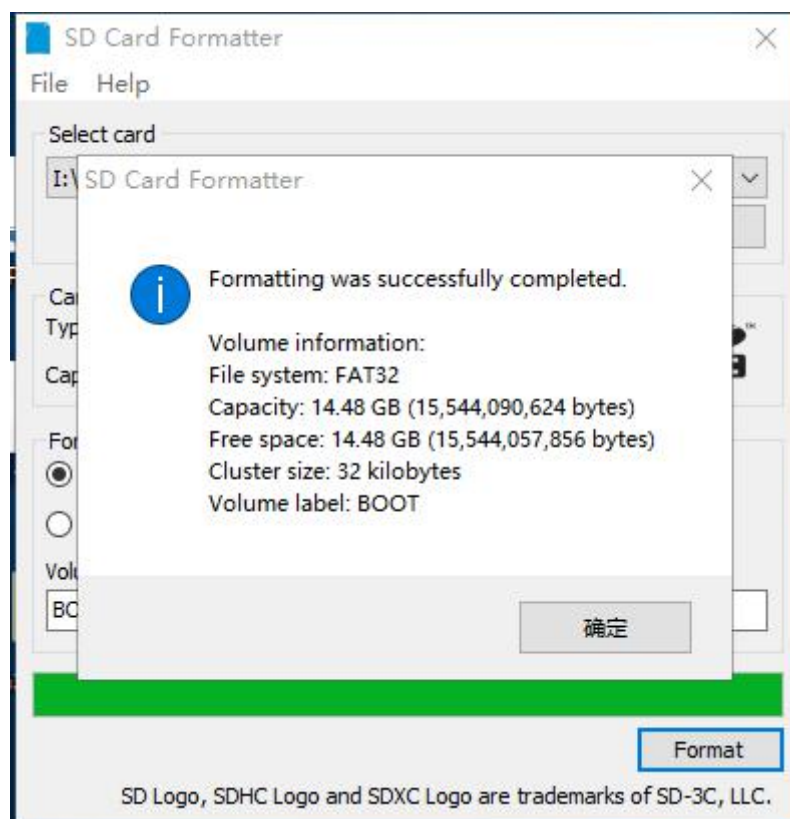
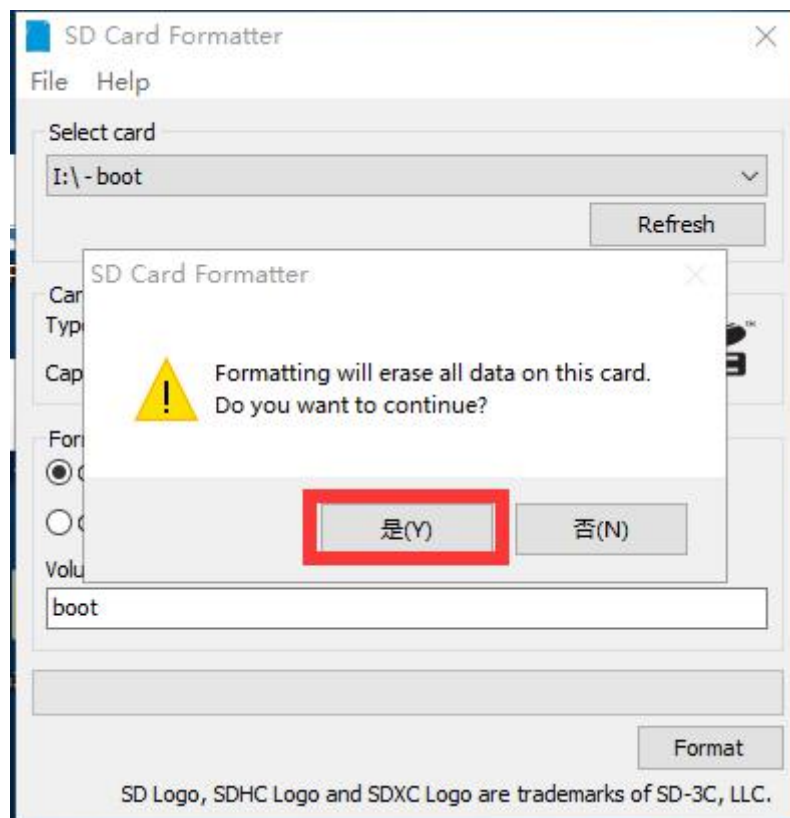
Step 3: Initialize the SD card (note: you need to format the SD card first before burning the image).

1) Insert SD card into card reader, connect it to computer and open the SD Card Formatting Tool



2) Open the installed SD Card Formatter, select the SD memory card to be burned into the image as shown in the figure below. Fill in the name "boot" under the "Volume label" label, and click the "Format" button. Click "Yes" and "OK" in the pop-up reminder box, and wait for the formatting to complete.





3) Next step is burn the images.

3. Download Official Image



Scan the QR code to download

Or open a web browser and then go to the following URL:
“<https://www.raspberrypi.org/downloads/raspbian/>”.

There are three versions for your choice but we recommend the first one which is user-friendly.

(Tip: It is recommended to download the Torrent file on the left side of the icon below, and then use the Thunder tool to download the resource.)

The screenshot shows the Raspberry Pi download page with three versions of the operating system. Each version is represented by a card with a Raspberry Pi logo icon, a title, a description, version information, and download links. The first version, 'Raspbian Buster with desktop and recommended software', is highlighted with a red border. The second version, 'Raspbian Buster with desktop', is based on Debian Buster. The third version, 'Raspbian Buster Lite', is a minimal image based on Debian Buster. Each card also includes a 'Release notes' link and 'Download Torrent' and 'Download ZIP' buttons. SHA-256 hashes are provided for each version.

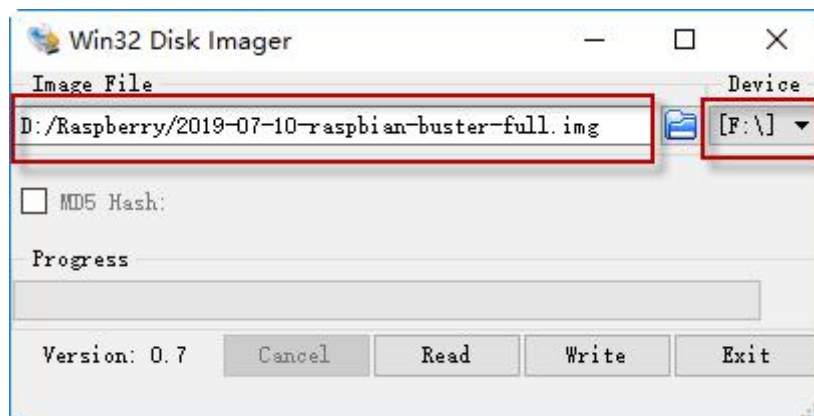
Version	Release date	Kernel version	Size
Raspbian Buster with desktop and recommended software	July 2019 2019-07-10	4.19	1945 MB
Raspbian Buster with desktop	July 2019 2019-07-10	4.19	1149 MB
Raspbian Buster Lite	July 2019 2019-07-10	4.19	426 MB

4. Image Burning Method

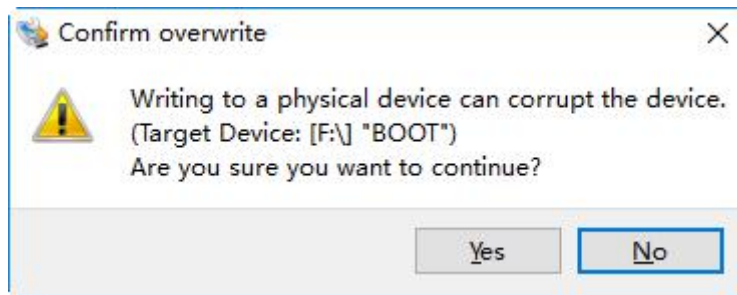
1) After unzipping the image , double-click the "Win32DiskImager.exe" file.

Name	Date modified	Type	Size
Changelog.txt	2018/7/4 11:51	Text Document	2 KB
GPL-2	2018/7/4 11:51	File	18 KB
LGPL-2.1	2018/7/4 11:51	1 File	26 KB
libgcc_s_dw2-1.dll	2018/7/4 11:51	Application exten...	116 KB
libstdc++-6.dll	2018/7/4 11:51	Application exten...	958 KB
mingwm10.dll	2018/7/4 11:51	Application exten...	47 KB
QtCore4.dll	2018/7/4 11:51	Application exten...	2,825 KB
QtGui4.dll	2018/7/4 11:51	Application exten...	9,916 KB
README.txt	2018/7/4 11:51	Text Document	3 KB
Win32DiskImager.exe	2018/7/4 11:51	Application	84 KB

2) Click the button of the folder icon in the pop-up page, and then find the location of the image file. Select it, and then click (▼) to select the SD card volume to be burned.



3) After completing the above steps, click the "Write" button to start writing. Click "Yes" to continue to the next step when the confirmation box pops up . (If an error is reported, there may be Chinese in the path of the image file, and it needs to be modified to a path without Chinese.)



4) The programming progress will be displayed on the interface. After the writing is completed, a pop-up window will prompt "Write Successful". Click "OK", and then the word "Done" will also appear. Close all software to complete the image writing. (If you are prompted to format an option, please do not format)

