

***SNESES***

**QUICK START GUIDE**

## **I. WHAT DO I NEED?**

- A Raspberry Pi. If possible, the latest model (3 B+).
- A micro SD card (minimum recommended: 16GB, class 10).
- A microSD to SD or microSD to USB adapter (usually included when buying a microSD card).
- An USB drive (8GB minimum).
- At least one Direct Input (D-input) compatible controller. Retro-bit's, Retroflag's and 8bitdo's are D-input compatible.

## **2. STEP BY STEP**

### **2.1. Installation**

1. Go to [www.sneses.com](http://www.sneses.com), click on Downloads and download the image ("SD Card Image").
2. Extract the zip contents. The .img file (the image) is what we want to flash to the microSD card.
3. To flash the image on the microSD, we'll use Balena Etcher. Download it from [here](#) and install it.
4. Insert the microSD to the SD or USB adapter and connect it to your computer.
5. Open Etcher. You'll see three buttons from left to right: Select Image, Select Drive and Flash.

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6. Press the first button (Select Image) and search for the image (the .img file) you extracted in step 2.
7. After selecting the image, you'll be able to press the second button to select where to flash the image. That would be the microSD card, currently inserted in the SD or USB adapter, connected to your computer. Actually, if you have no other USB device connected to the computer, the microSD card will be automatically selected.
8. Finally, click on “Flash!” and wait a few minutes. The image will be flashed and then validated.
9. When finished, disconnect the microSD from the computer, put it into your Raspberry Pi and turn it on. You might see something like this on screen:

```
L/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0xa4f0917a

Device      Boot Start    End Sectors  Size Id Type
/dev/mmcblk0p1  8192   96663  88472 43.2M c UFS FAT32 (LBA)
/dev/mmcblk0p2  98304 7786928 7688625 3.7G 83 Linux

Command (m for help): Partition number (1,2, default 2):
Partition 2 has been deleted.

Command (m for help): Partition type
  p primary (1 primary, 0 extended, 3 free)
  e extended (container for logical partitions)
Select (default p): Partition number (2-4, default 2): First sector (2048-30924799, default 2048): Last sector, +sectors or +size(K,M,G,T,P) (98304-30924799, default 30924799):
Created a new partition 2 of type 'Linux' and of size 14.7 GiB.

Command (m for help):
Disk /dev/mmcblk0: 14.9 GiB, 15833477600 bytes, 30924800 sectors
Units: sectors of 1 * 512 = 512 bytes
    4.5124371 Sector size (logical/physical): 512 bytes / 512 bytes
rc.local: L/O size (minimum/optimal): 512 bytes / 512 bytes
[314]: Disklabel type: dos
Partition #2 contains a ext4 signature. Disk identifier: 0xa4f0917a

Device      Boot Start    End Sectors  Size Id Type
/dev/mmcblk0p1  8192   96663  88472 43.2M c UFS FAT32 (LBA)
/dev/mmcblk0p2  98304 30924799 30826496 14.7G 83 Linux

Command (m for help): The partition table has been altered.
Calling ioctl() to re-read partition table.

The kernel still uses the old table. The new table will be used at the next reboot or after you run partprobe(8) or kpartx(8).
[ 4.559451] rc.local[314]:
Re-reading the partition table failed.: Device or resource busy
Please reboot
```

Don't worry, it's normal. Just disconnect the USB power and connect it again to reboot. This error usually appears everytime you flash the image to your microSD.

## 2.2. First boot

Shortly after booting the Raspberry Pi, SNESES logo will appear on screen, and after that, the frontend will be shown with a countdown and a message saying it's looking for controllers. Let's see how to connect controllers on SNESES.

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**IMPORTANT:** SNESES is only compatible with Direct Input (D-input) controllers. For instance, 8bitdo controllers are set to D-input mode by pressing B+Start to turn them on. On Retroflag controllers, you have to hold “Y” before connecting them to the USB port (after that, you can release “Y”; you only need to do this once).

### **CONNECTING AN USB GAMEPAD**

SNESES will detect your USB controller the moment you connect it. Also, if it's in the known controllers database, all buttons will be automatically mapped. Otherwise, the mapping process will start (explained later).

### **CONNECTING A BLUETOOTH CONTROLLER**

If your Raspberry Pi has an internal or USB bluetooth adapter, turn on your controller in D-input mode and put it on pairing mode. Wait for it to be detected. Some messages will explain the progress on screen. Once the controller is connected for the first time, you won't have to put it on pairing mode again. Just turn it on and SNESES will detect and connect it after a few seconds.

Like with USB controllers, if the controller is in the known controllers database, all buttons will be automatically mapped. Otherwise, the mapping process will start (explained later).

### **INPUT MAPPING PROCESS**

When you connect a controller that is not in the known controllers database, you'll be prompted to press all buttons in sequence: A, B, X, Y, Start, Select, L, R and Hotkey.

If you don't have some of those buttons (i.e: Select, L or R), let the 5 seconds timeout pass.

“Hotkey” can be any button of your controller (it's select if you don't set one). It's used for certain actions while playing:

- Hotkey + Left/Right: decrease/increase save state slot number.
- Hotkey + Up/Down: increase/decrease volume.
- Hotkey + A: save state.
- Hotkey + B: load state.
- Hotkey + X: end game and return to menu.
- Hotkey + Y: reset game.

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- Hotkey + R: toggle fast-forward.

### CONNECT MORE BLUETOOTH CONTROLLERS

If you've already paired one bluetooth controller and want to connect more, you have to options:

1. This is similar to the first bluetooth controller connection process. Turn the first controller off and turn the Raspberry Pi on. After SNESES logo is displayed, the menu will appear and the controller search function will start again. Turn on your second controller, put it on pairing mode and wait for it to be connected.
2. With the first bluetooth controller connected, turn the second controller on and put it on pairing mode. Then, with the first controller, press Start to open the Options menu, then go to Settings→Input→Connect gamepad and press A. The process is the same as the one on boot. Wait for the controller to be detected and paired.

### 2.3. Add games, boxarts, etc

**IMPORTANT:** while SNESES allows adding around 550 games with boxarts in a 1GB RAM Raspberry Pi, it's strongly recommended not to do it. With 100-200 games, performance is good and browsing is still convenient. More than that, the experience will get worse (loading times will be really long, screen could blink due to having overloaded the GPU, etc).

Other frontends allow adding like much more ROMs but SNESES is not meant for having all SNES ROMs, but for turning your Raspberry Pi into a SNES mini where you can add your preferred games, not full romsets. You also have a Favourites list for the best of your list.

In your USB drive, create a directory named "games" where you'll put your ROMs. Then, inside "games", create another directory named "boxarts" and put your games boxarts there.

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Now, copy your games and boxarts to the appropriate location. You can add around 1000 ROMs. However, it's strongly recommended adding only those games you actually plan to play, for better performance, faster loading times and more convenient navigation.

**IMPORTANT:** for boxarts to be recognized, they have to match the ROM file name. Example: if you have a game with the name "Super Mario World.bin" in "games" directory, the boxart you have to copy to "games/boxarts" should be named "Super Mario World .png" or "Super Mario World .jpg" (both pngs and jpgs are allowed), with the exact same letters, spaces, symbols, etc.

Now, to copy the games, make sure your Raspberry Pi is off, connect the USB drive and turn the Raspberry Pi on. After a few seconds, on screen you'll see some messages indicating that games and boxarts are being copied. Once finished, SNESES might take some time to boot, as all boxarts must be processed (converted to jpg and resized to the needed size).

If you add games through FTP instead of USB, please remember that they won't be automatically resized. You have to go to Options-Tools-Resize boxarts and press A.

## 2.4. Updates. Backup and system restore

New SNESES versions can be released as **images** (most of the times) or **USB updates** (not always).

### IMAGE UPDATE PROCESS

To install a new version from an image, you have to follow the same process explained at the beginning of this document. However, flashing the microSD card again means that you'll lose all games, boxarts, save states, settings...

Fortunately, the Backup and Restore system were developed to avoid that.

To make a system backup:

1. Connect a pendrive to your Raspberry Pi.
2. Press Start to open Options menu, then go to Tools→Backup and press A.
3. Wait a few seconds until the whole backup is made and disconnect the USB drive when finished.

Having done a backup, you can safely flash the microSD with the latest image, just as explained at the beginning of the document.

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Once the new image has been flashed to your microSD, you have to restore your data. Follow these steps

1. Turn on your Raspberry Pi.
2. Connect the USB drive where your backup was made.
3. Press Start to open the Options menu, then go to Tools→Restore and press A. After a few seconds, your Raspberry Pi will reboot and all your games, boxarts, save states and settings will be where they were.

## **USB UPDATE INSTALLATION**

These updates are easier to install:

1. Download the file “USB update” from [www.sneses.com](http://www.sneses.com) if it’s available and copy it to your USB drive.
2. Connect the pendrive to your Raspberry Pi and turn it on. The update will install before the SNESES logo is displayed.
3. Disconnect the USB drive when you see SNESES logo. If you leave it connected, the update will be installed everytime you boot the Pi. It’s not bad, but it might be annoying seeing all those messages on every boot.