














MicroSD card reader  
required to build this  
KIT!



# Installation Booklet

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## Downloading the Operating System

Using your favorite browser visit [www.retropie.org.uk/download/](http://www.retropie.org.uk/download/)

Scroll down until you see a red button written Raspberry Pi 2/3 and left click on it to open!

When prompted choose to open file with your favorite file extractor, we used WinRAR.

Extract the .IMG file to your desktop so you can find it easily.

## Downloading and installing Required Software

*Note: At any time, you can visit [www.abra-electronics.com](http://www.abra-electronics.com) and type in Raspberry Pi – SNES in the top right search bubble to download a pdf version of this manual in attachment section. The attachment section is located underneath the image of the product. You need to press control key and left click in Windows/Linux or Command and left click in Mac to follow the blue link.*

### SD Formatter

Please go to [https://www.sdcard.org/downloads/formatter\\_4/](https://www.sdcard.org/downloads/formatter_4/) , Scroll to the bottom of the webpage and select in the blue box to begin downloading the software. The left side box is for windows and the right side box is for mac. For Linux users please use Gparted or any other formatter you may have installed.

### Disk Imager

Please go to <https://etcher.io/> , to download the image writer. On the webpage, the green circle will ask what operating system you want to download and install for, select your operating system you are currently using.

Windows users simply click download. For mac and Linux users please use the arrow on the right to bring the drop-down menu. Select your operating system and the bit version, it will automatically ask to save or open. Select open and extract to desktop. Install the program and proceed to the next step.

### File Extractor

For Windows users, we recommend using WinRAR to extract files. <http://www.rarlab.com/download.htm> , scroll down until you find your preferred language and bit version that your computer supports. It will automatically pop up asking to save or open. Open the file and simply install the program.

For Mac users, you have Mac OS Extractor that will automatically allow users to extract the file.

For Linux users, you have Linux file extractor built-in, simply right click the files to extract the file.

**NEVER EXTRACT THE FILE WITH .ISO EXTENSION NAME.**

## Formatting the SD Card

It is a good idea to always format new and old MicroSD cards before flashing a new OS on them. Insert your MicroSD card into your computer using an SD Card reader. Open SD Formatter software after installing it. It should automatically detect your MicroSD Card. Select option button below the Volume Label. Select the format size adjustment as ON from the drop-down menu and press okay. Please make sure the drive name is the correct one by checking your devices in the file explorer. Once you are certain this is the correct device, press format and wait for it to complete; it will then prompt you with a pop up stating “format is complete”, this works for Mac and Windows.

For Linux users, you must use Gparted commands to flash the MicroSD card as FAT32.

## Writing the Image to the SD Card

Open Etcher program after finishing the install, it might take a while to open. When the software opens, press on the blue button asking to select the image. A window will pop up asking to locate the operating system where you downloaded it before. Press on the .IMG file and press on the bottom “Open” button. Then it will automatically move to the second box to select the MicroSD card. It will automatically look for your MicroSD card and skip to the next process. If you do not see this behavior, please check to see if you have correctly inserted the MicroSD card into the computer. To ensure you have the correct drive please open the file folder and check that the name of the volume corresponds with what your operating system sees it as. Example: the card will show the name F: in windows and F: in the software. Once you are sure the path is correct press flash and wait for it to complete the burning process. It may ask for some permissions, enter “agree” or “okay”.

Image write Complete!

## Optional Modifications to screen resolution

When you insert the MicroSD card into the Raspberry PI it should automatically detect the screen size on boot. However, if you find the screen is not adjusted properly this little guide will explain how to do so.

Please check what the resolution of your screen is before attempting this fix. It can be done by searching the model number of the screen.

Even if you already inserted the MicroSD card into the Raspberry Pi, you can attempt this method by powering down the PI and inserting it into the SD reader of your computer.

Open the SD card folder with the file explorer or with Mac equivalent file explorer. Locate the file config.txt or config and open your preferred text editor. At the far end of the line, insert the following command to assign the screen size. You can modify the blue text to the resolution you have. If the text looks messy like a blob, please use notepad++ or turn on word-wrap.

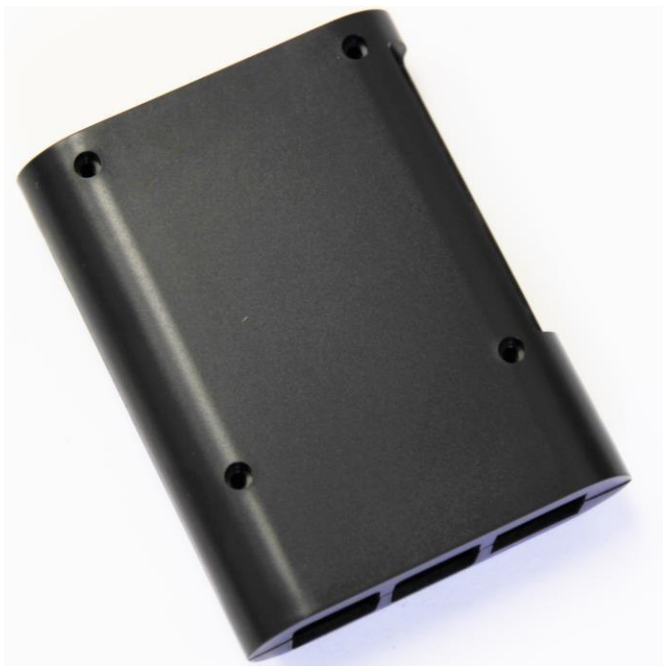
```
max_usb_current=1  
hdmi_group=2  
hdmi_mode=1  
hdmi_mode=87  
hdmi_cvt 1024 600 60 6 0 0 0
```

## Safely Eject the SD Card

Before you rush to insert the MicroSD card into the Raspberry PI, it is always a good practice to safely remove or eject the device. This can be done by moving the cursor in the file explorer and right clicking to choose eject device.

## Assembling the Case

- 1) Open the Enclosure to find a plastic bag with four Philips head screws.



- 2) Slide the Raspberry PI into the bottom enclosure and ensure the HDMI port goes through the cutout. Align the screw holes with the Raspberry PI through holes. Alternatively, you can put the top frame first but you must flip the board upside down to insert the bottom plate.



- 4) Place the top or bottom frame in and close the unit shut. Then on the bottom board insert four small screws to help secure the frame in place.



Now to have the Raspberry PI installed in the enclosure!

## Wiring the PI

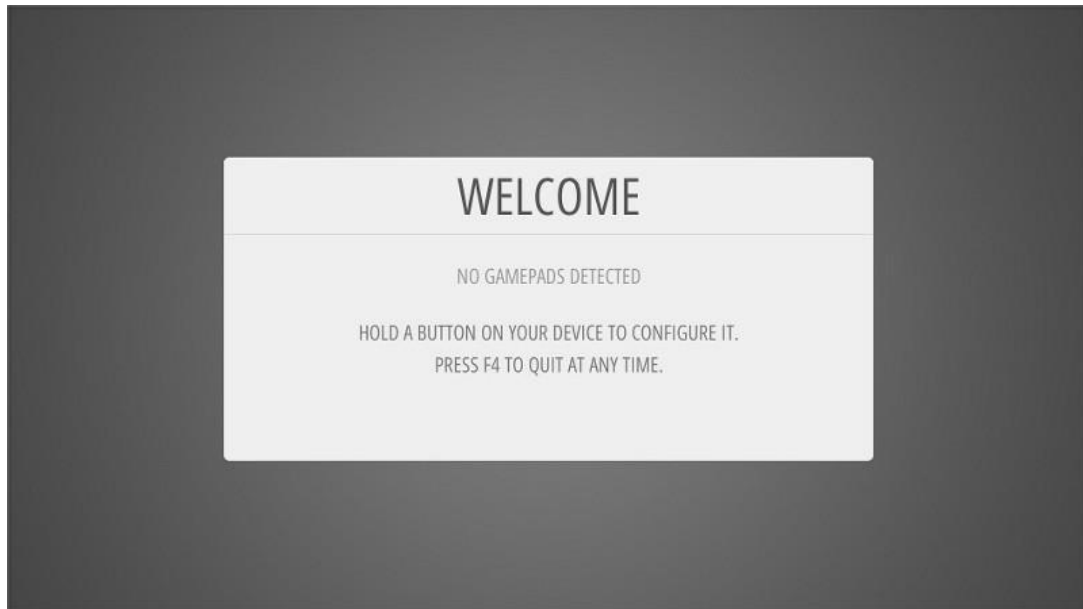
Simply connect the HDMI cable for video and audio signal. You could connect a 3.5mm Audio jack for audio output but will need to change the settings in the software. Connect one SNES controller into the USB port. Either connect an Ethernet Cable or use the internal WI-FI module on the Raspberry PI 3B+ to help load the ROMs into the PI 3B+. Connect the MicroSD card into the Raspberry Pi with the screws side facing towards the table and the white label of the SD card facing in the same direction of the screws. You may now insert the Micro USB cable to power the Raspberry PI.

**Note:** If you are to use Wi-Fi from the RPI 3B+, you will need to plug in a USB based Keyboard to configure the wireless settings.



## Configuring Controls

On boot, you will be presented with RetroPie splash screen and might take a while to load. The screen will automatically configure itself and change to multiple times. Wait until the screen prompts you with a message welcoming you and indicating 1 Gamepad Detected.



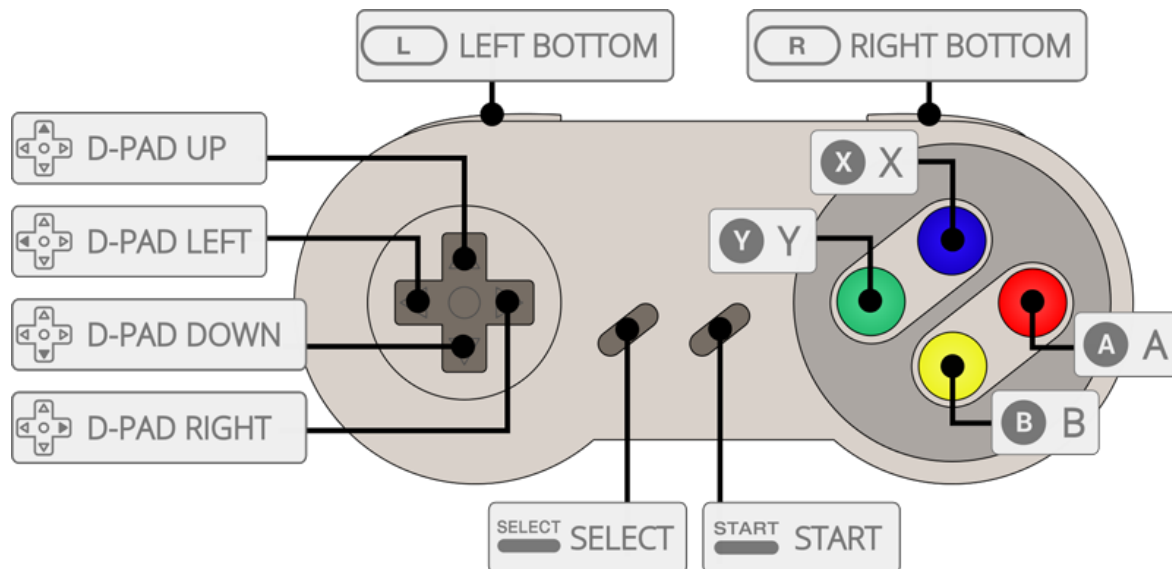
Once you see this screen using your SNES compatible controller press and hold on A button until it changes.





To register a physical button command from your controller to the software you must tap the button indicated once.

To skip the controls that your controller does not come with like the analog functions you simply press and hold a preregistered key until it moves on to ask for the next key assignment.



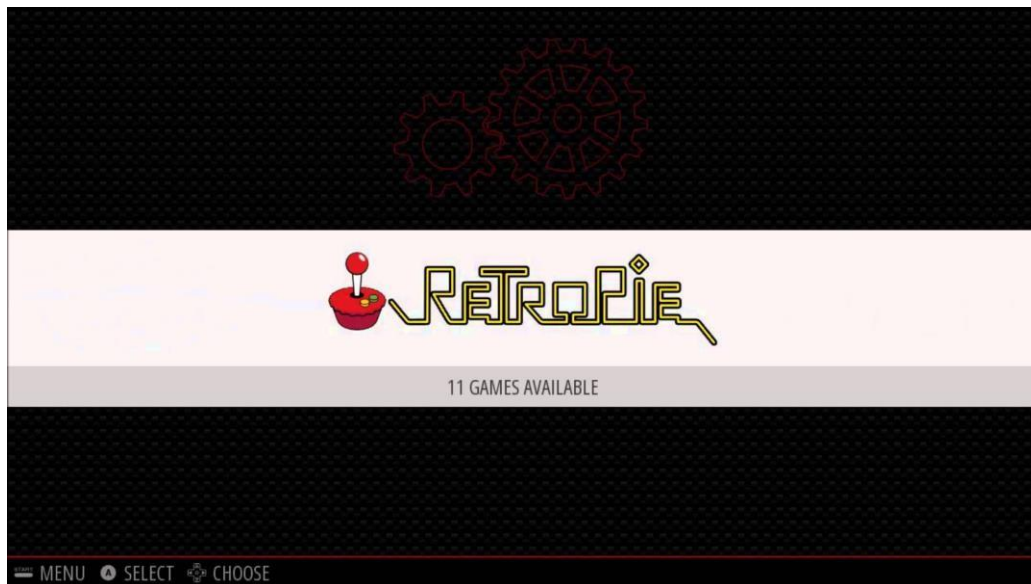
Press and hold on A button when it asks for defining Left/Right Trigger, Left/Right Thumb, Left/Right Analog directions.

If you let go of the A button prematurely before it moves onto the next key assignment a status message of "already taken" will appear. Simply press and hold on the A button again until it moves on.

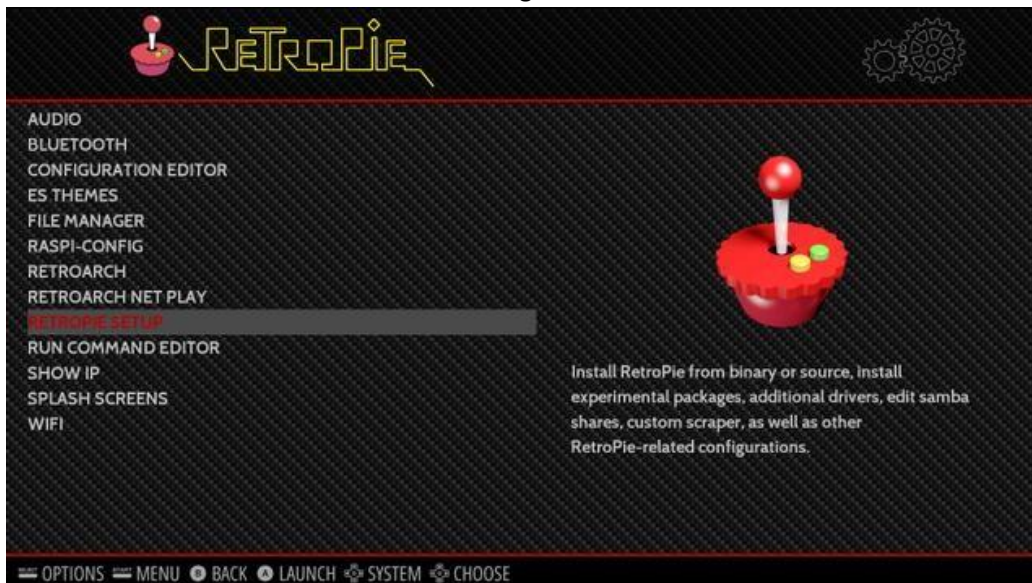
At the end of the list you will okay is now selected press A button and wait a few minutes for the keys to be registered this might take a while.

It will now boot into the lobby where you can select which emulator to run! You can connect the second controller now as they share the same pin mappings, however please remember the first controller that was plugged in is the master controller for making selections.

## Setting Internet Access



You will be greeted with this menu when you have finished configuring your controls. Press A to open RetroPie Configuration Menu.

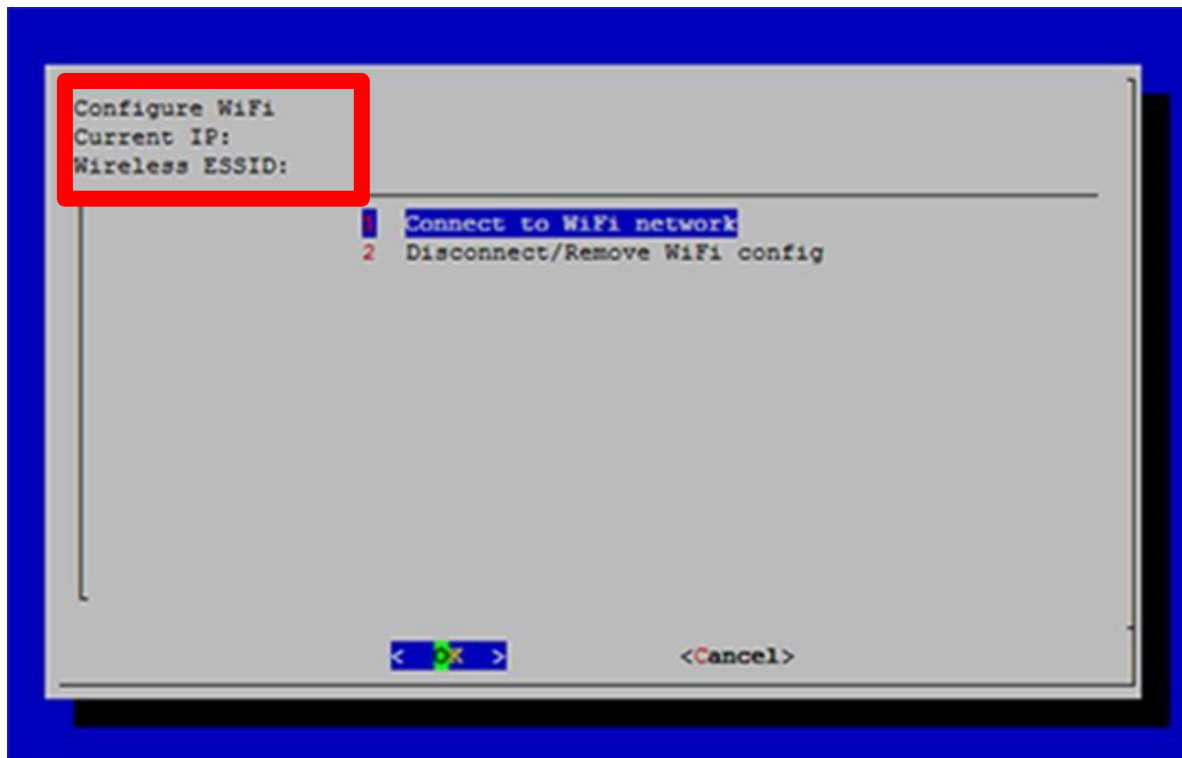


If you have Ethernet connected you can skip this step. Using the controller press the DOWN button until you see WIFI and press A to enter the configuration settings. Once in you will see a blue screen that ask to connect or disconnect to a WIFI network. Press X button to connect to a WIFI network. Then use the UP or DOWN button and press the X button to select the WIFI ID that you want to connect to.

It will then ask you to enter in the password. Using your keyboard type in the password and press A on your controller when you are done.

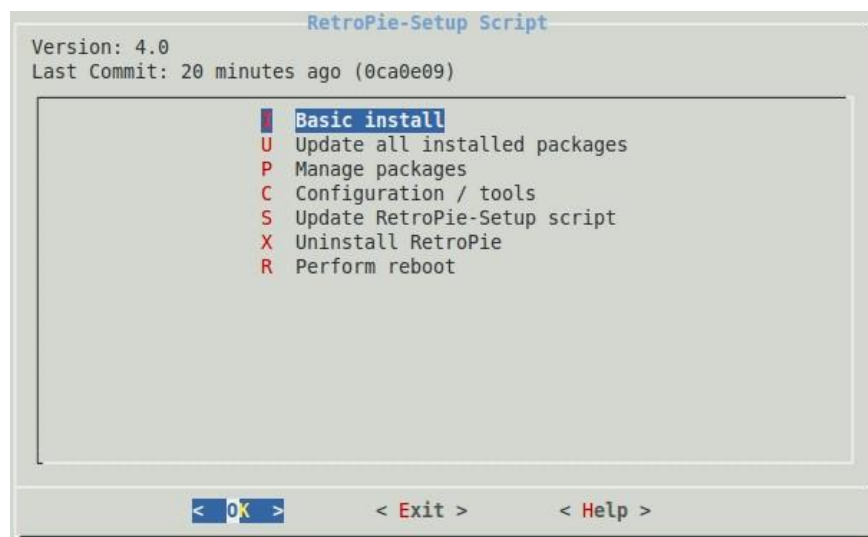
At any time, you can cancel this setup by pressing the LEFT button and press X to cancel.

When you have successfully connected in the password and connected to verify if it is connected look at the image below in the red rectangle as that area should have your IP address and wireless AP ID. Press the LEFT button and press X to exit back to the configuration menu.



## Updating the RetroPie via Command line

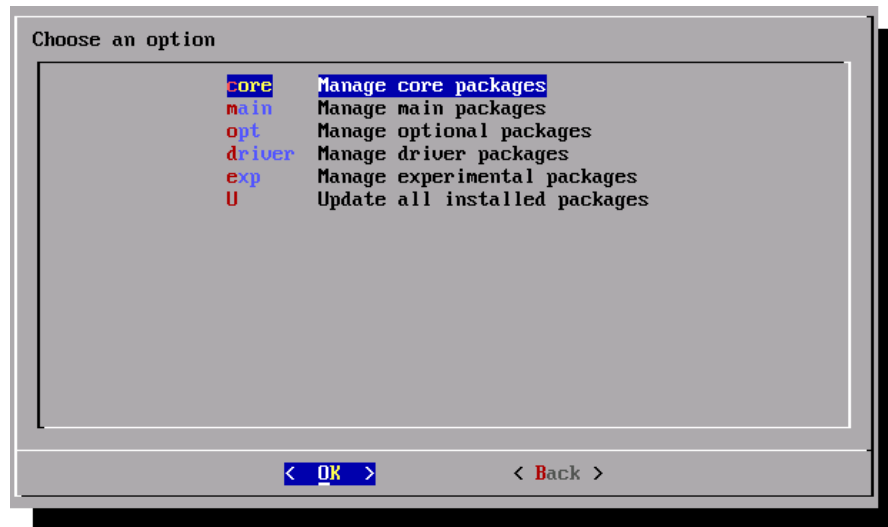
In the configuration page for RetroPie with the black background using the UP or DOWN key to navigate to "RETROPIE SETUP" and press A. A blue screen will appear.



In the center, will be a gray box use the DOWN button and X button to enter menu U to update your RetroPie Emulators and scripts to the latest version at any time!

## Configuring Emulators

In the same menu go down to “Manage Packages ” and press the button X to enter.



In this menu use the DOWN or UP buttons to enter in “Opt” or “Exp”. We recommend to install emulators from the optional as some are better than the default emulators that are supplied with RetroPie.

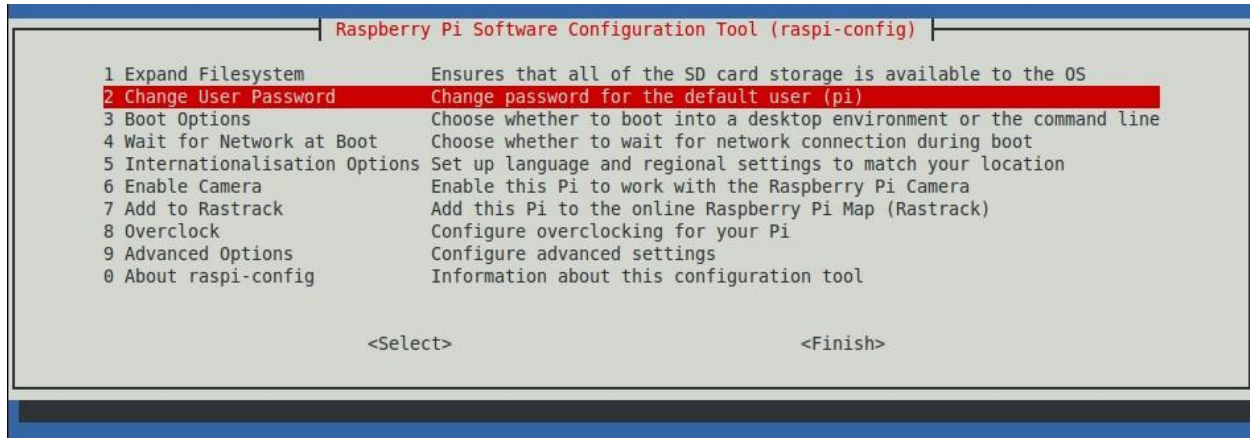
Once you enter in “OPT” use the D-Pad (UP or DOWN) to navigate to any emulator that you want to install. See our list in the Emulator Menu section of this manual for some recommendations.

Once you see the emulator you like press X to open the menu, in this menu press X again as install will be automatically selected. Once installed press the Right or Left button to exit the menu of the emulator and you should see next to the emulator a new label written ‘ (INSTALLED) ’. You may now exit the menu by pressing the Back selection using the RIGHT or LEFT button and press X.

The installation of the emulator may take a while.

# Configuring Audio/Storage Space/Video Memory

In the configuration screen of RetroPie with the black background use the UP or DOWN button to navigate to “AUDIO”. Press the A button to enter audio setting.



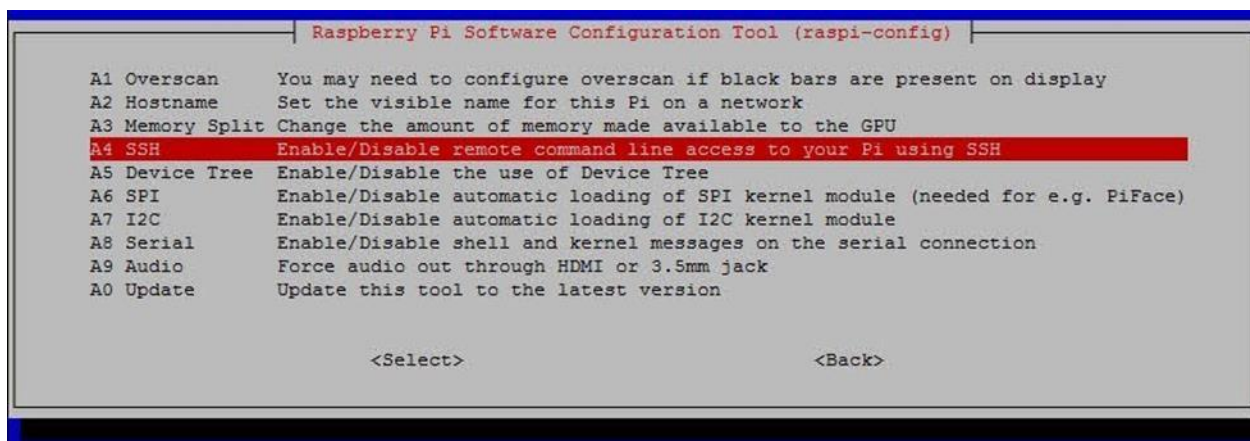
This menu may seem familiar with Raspberry Pi owners using Raspbian as this is the configuration for the Raspberry PI.

## Expand Storage

To expand the storage space, press LEFT button to highlight < Select > then X button on “Expand Filesystem”. It will automatically expand and inform you that it has been completed. Press X to return to the Raspberry Pi configuration.

## Audio Output

To change audio settings, use the DOWN button and press x on “Advanced Options”



On this screen go down to “Audio”, you will have three options choose whichever you prefer. Should you be using HDMI press the DOWN button to “Force HDMI” and then press the LEFT button to select “ok” and press X.

If it is the 3.5mm (‘ headphone ’) jack, please press X on that option and proceed with the LEFT button to select “ok” and press X.

## Adjusting Video Memory

If you are planning to play N64 ROMS, we recommend you adjust the video memory sharing. Press the UP button to get to “Memory Split ” and using a keyboard enter a value of 256 to 512 MB for memory splitting. We do not do this normally as this kit is specifically chosen to run SNES ROMs or lower.

Press the Right Button to < Back > and X button to exit the Advanced Configuration at any time.

Press the Right button < Finish > and X button to exit the Raspberry Pi Configuration at any time.

## Emulator Guide

<https://github.com/retropie/retropie-setup/wiki/Supported-Systems>

The link above has a list of all consoles and emulators that RetroPie supports. The Emulator names and rom extensions is what you should look for if you want to install one. See Configuring Emulators in this manual to find out how to install them.

## Adding Roms

To add Roms simply go to your computer, have some ROMs ready on your desktop. In your file explorer type [\\RETROPIE](#). Oddly enough, if you have the system connected to the internet already just follow the hyperlink and it should open a window on your computer. Click on the folder “ROMs” and insert the appropriate ROMs in the correct folder. Example NES games will go in the nes folder. Restart the raspberry pi and the games should appear in the emulator!

## Configuring the Splash Screen

This is additional information for those who want to personalize their console. You can change the splash screen image by importing image or select preinstalled image in the system.

By visiting this link, you can view all the preinstalled splash screens in RetroPie.

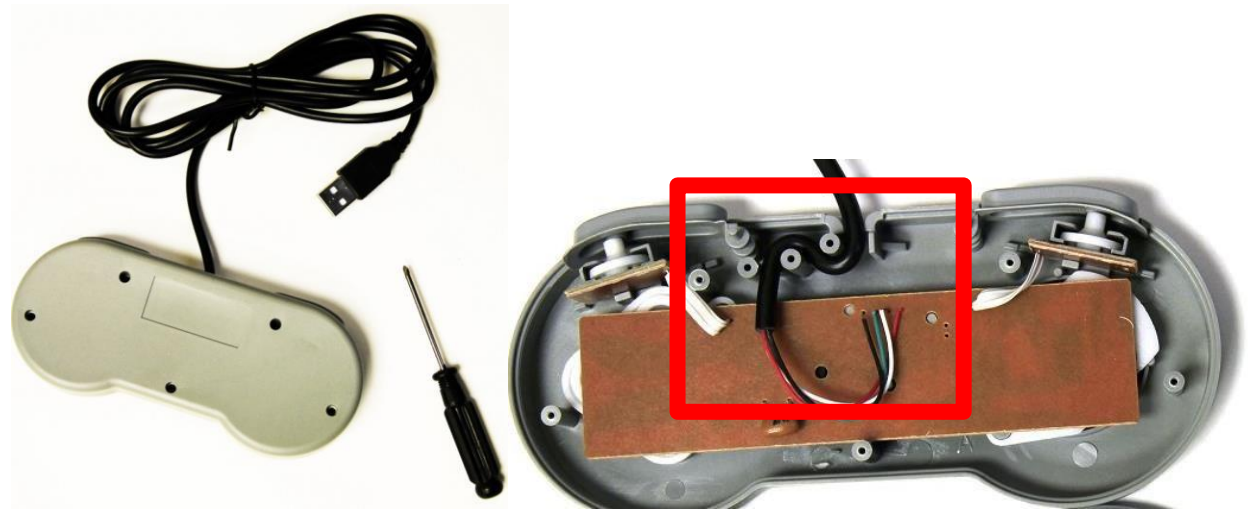
<https://github.com/RetroPie/retropie-splashscreens> ; click on the .png files to view the images and press the browser back button to view more.



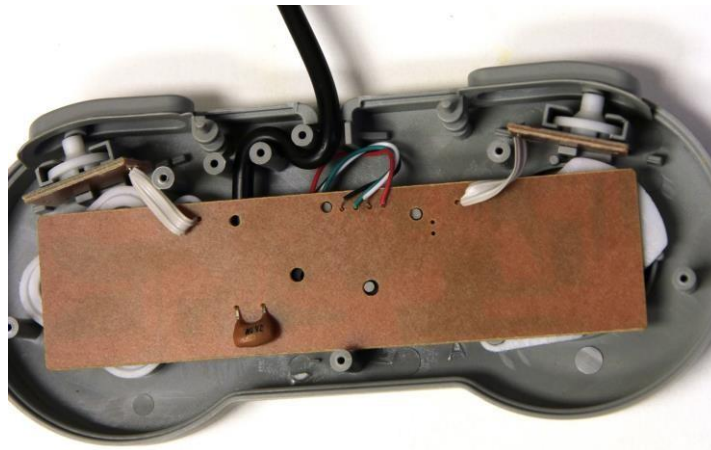
Visit <https://github.com/retroPie/retroPie-setup/wiki/splashscreen> for detailed steps on adding your own custom image or video splash screen on boot!

## Adjusting the Controller

For some users, they may complain that the controller buttons are too stiff for their hands to press. This little modification will help make the buttons travel further down. Using a Philips screw driver, remove all five screws and gently pry the enclosure apart.



After prying the board notice the box in red indicating how the cables are placed. We will move the wire underneath the brown board allowing the pressure behind the board and back plate to reduce. It should look like the image below. Pay attention to the rubber pads as they should be locked in place and if two top L and R buttons can be reseated to press on the shoulder buttons.



Ensure that you place the two top screws in first when putting the frame back together and fastening them in so that the shoulder buttons L and R, are seated properly before securing the other screws.



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