

GRS BUILD-A-CADE RetroPie™ Setup Guide for Raspberry Pi™ 3

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What You Need

- ▶ Raspberry Pi™ 3 installed in the BUILD-A-CADE cabinet.
- ▶ Computer and WiFi internet access
- ▶ Raspberry Pi Imager from www.raspberrypi.org/software
- ▶ Class 10 microSD card (32gb or larger recommended)
- ▶ MicroSD card reader
- ▶ SSH client software (Windows - PuTTY www.putty.org | MAC – Terminal)
- ▶ SFTP client software for transferring files (Windows – WinSCP winscp.net | MAC Filezilla filezilla-project.org)

Install RetroPie™ on Raspberry Pi™ 3A+, 3B, or 3B+

1. Download the official RetroPie™ image from retropie.org.uk/download. Make sure to select the “Raspberry Pi 2/3/Zero 2W” version.
2. Open Raspberry Pi Imager on your PC and click on CHOOSE OS.
3. Scroll to the bottom of the list and select “Use custom”.
4. Navigate to and select the downloaded image file and click “Open”.
5. Insert your MicroSD card/card reader and click on CHOOSE STORAGE.
6. Select your microSD card from the list.
7. Click on the cog for Advanced options.
8. Tick “Enable SSH” and “Set username and password”
9. Set the username and password. Default is
Username: pi
Password: raspberry.
10. Tick “Configure wireless LAN” and enter your WiFi network SSID and Password.
11. Select your Wireless LAN country from the drop-down list, then tick “Set locale settings” and set your Time zone and Keyboard layout.
12. Untick “Eject media when finished” and click SAVE.
13. Click on WRITE and then click YES to burn a new RetroPie™ image to the microSD card.

Edit cmdline.txt

14. After it completes, navigate to the SD card (labeled “boot”) in your file explorer. Open cmdline.txt in a text editor and make the following changes (This must remain a single line of code. Do not press enter):

```
Change console=tty1 to console=tty3
Just after plymouth.enable=0 , add
vt.global_cursor_default=0 quiet splash logo.nologo
Make sure there is a space after logo.nologo.
```

15. Save the file, and exit.

Edit config.txt

16. Open config.txt with a text editor and make the changes:
Uncomment (remove #) hdmi_force_hotplug=1
Add the following lines to the end of the file:
disable_splash=1
display_rotate=3
dtoverlay=gpio-shutdown
17. Save the file and exit.
18. Eject the MicroSD card from your computer and insert it into the card slot on the back of the BUILD-A-CADE cabinet.
19. Power on the Raspberry Pi™. Wait for the Welcome screen.

Install Retrogame for Control Panel Integration

For complete Adafruit Retrogame information, visit learn.adafruit.com/retro-gaming-with-raspberry-pi.

20. For this next step, ssh into the Pi and log in with your username and password (default is pi / raspberry).
21. When at the command prompt, copy and paste, or enter the following code exactly as it appears. The code is only 3 lines.

```
cd
curl https://raw.githubusercontent.com/adafruit/Raspberry-Pi-Installer-Scripts/master/retrogame.sh >retrogame.sh
sudo bash retrogame.sh
```

22. Select any option, except Quit, and press Enter. Do not reboot yet.
23. Download sourceforge.net/projects/build-a-cade/files/retrogame.cfg and replace the existing file in \boot\ using your SFTP client.

Install Raspi2Raspi for HDMI Integration

24. To enable HDMI out, ssh into the Raspberry Pi™ and log in with your username and password.
25. Type `sudo apt update` and press ENTER.
26. Next, type `sudo apt-get upgrade` and press ENTER. Press Y and ENTER when prompted. This step can take a long time.
27. You will need to install cmake:

```
sudo apt-get install cmake
```

28. Next, you will need to install libbsd-dev:

```
sudo apt-get install libbsd-dev
```

29. Make sure you are in /home/pi directory

```
cd /home/pi
```

30. Download raspi2raspi to a new folder with:

```
git clone https://github.com/SteBuTOS/raspi2raspi /home/pi/raspi2raspi
```

31. Change to the new dir with

```
cd raspi2raspi
Continue with
mkdir build
cd build
cmake ..
make
sudo make install
sudo cp ../raspi2raspi.service /etc/systemd/system/
sudo systemctl daemon-reload
sudo systemctl enable raspi2raspi.service
sudo systemctl start raspi2raspi
```

32. Reboot by typing `sudo reboot` and press Enter.

Configure Controls

33. At the welcome screen, press and hold a button or joystick direction until the CONFIGURING KEYBOARD window appears. Then configure the controls as follows (or however you prefer):

D-PAD UP = Joystick Up
D-PAD DOWN = Joystick Download
D-PAD LEFT = Joystick Left
D-PAD RIGHT = Joystick Right
START = Button 1 (left button)
SELECT = Coin 1 (left coin button)
BUTTON A = Button 3 (right button)
BUTTON B = Button 2 (center button)
BUTTON X = Coin 2 (right coin button)
BUTTON Y = Rear button 1
For the rest of the controls, press and hold any button to bypass.
HOTKEY ENABLE = Coin 1 (or whatever you chose for SELECT)
Press A to exit to EmulationStation

Install Vertical BUILD-A-CADE Theme

(Modified version of VERTICAL LIMIT by Dwayne Hurst)

You can now choose to install the Vertical BUILD_A_CADE theme

34. Download the Vertical BUILD-A-CADE theme from sourceforge.net/projects/build-a-cade/files/vertical_BUILD-A-CADE.zip
35. With the BUILD-A-CADE on and connected to your WiFi network, open your file explorer on your computer and navigate to \\retropie\configs\all\emulationstation.
Or
Using SFTP, navigate to \opt\retropie\configs\all\emulationstation
36. Create a new folder named “themes”.
37. Unzip the downloaded theme and place it into the newly created themes folder.
38. From the BUILD-A-CADE, press START, select UI SETTINGS and press the A button. Scroll down to THEME SET and then scroll left or right to choose VERTICAL BUILD-A-CADE. Press the B button until you reach the main screen.

Splash Screen Video

39. Download sourceforge.net/projects/build-a-cade/files/Pi3_files/home/pi/RetroPie/splashescreens/game_on.mp4 and place it in \\retropie\splashescreens (or \home\pi\RetroPie\splashescreens).
40. From the Options menu, choose Splash Screens. Then Choose splashscreen, Own/Extra splashscreens. game_on.mp4. Use the rear buttons for Enter and ESC in this menu.

Replace es_settings.cfg

41. Download sourceforge.net/projects/build-a-cade/files/retropie/configs/all/emulationstation/es_settings.cfg and place the file in \opt\retropie\configs\all\emulationstation. Overwrite the file if it already exists.

Add Spinner/Trackball Fix

42. Download sourceforge.net/projects/build-a-cade/files/Pi3_files/home/pi/RetroPie/retropiemenu/spinner-trackball_fix.sh and
and sourceforge.net/projects/build-a-cade/files/Pi3_files/home/pi/RetroPie/retropiemenu/spinner-trackball_reset.sh
and place both files in \home\pi\RetroPie\retropiemenu\
43. Next, download sourceforge.net/projects/build-a-cade/files/Pi_files/spinner-trackball_fix.png and sourceforge.net/projects/build-a-cade/files/Pi3_files/spinner-trackball_reset.png and place them in \home\pi\RetroPie\retropiemenu\icons
44. Then download sourceforge.net/projects/build-a-cade/files/gamelists/retropie/gamelist.xml and place it in \opt\retropie\configs\all\emulationstation\gamelists\retropie

Add Custom Game Collections for Each Control Panel

45. Download the collection files you want to add from sourceforge.net/projects/build-a-cade/files/collections and place them in \opt\retropie\configs\all\emulationstation\collections. Installed games will automatically be placed in the appropriate collection (configured for MAME 0.78 ROMs).
46. Restart EmulationStation for changes to take effect.

Increase Main Volume

47. From the Options menu, choose Audio / Mixer and adjust the volume to your liking using the joystick. Use the rear buttons for Enter and ESC in this menu.

Adding Games

48. Please see retropie.org.uk/docs/Transferring-ROMs for information on adding game ROMs. The BUILD-A-CADE is optimized for Ir-mame2003 using MAME 0.78 ROMs, but all systems supported by RETROPIE are playable.. For games that need sound sample files, place the samples in \\retropie\bios\mame2003\samples using the Samba-shares method described in the link above.
49. Once ROMs are copied, from the BUILD-A-CADE cabinet, press START, scroll to QUIT and press A, then RESTART EMULATIONSTATION, A. After restart, your Arcade ROMs will be listed in ARCADE CLASSICS and the appropriate control panel Game List. All other ROMs will be listed in their corresponding systems.
50. The first time you open a ROM, it will ask for the default emulator. Choose the appropriate emulator for the majority of your ROMs in that system. Select Ir-mame2003 for the MAME 0.78 ROMs. Use the rear buttons for Enter and ESC in this menu.

Scraping Game Information and Artwork

51. Scraping game information is best done using Lars Muldjord’s Skyscraper. See retropie.org.uk/docs/Scrapper/#lars-muldjords-skyscraper for instructions.