INTERLUDE | AUDIO

Indulge in the Sound

Detailed Startup Instructions

Digital or Analog HAT

The following document will guide you through the initial setup and configuration of your Interlude Audio HAT. Enjoying HiFi audio is just a few minutes away.

Contents

Prerequisites

Before getting started, make sure you have all the components you'll need:

- Raspberry Pi Imager v1.8.5 or later
    - Download from raspberrypi.com/software and install.
- Raspberry Pi
- Interlude Audio Digital or Analog HAT
- Interlude Audio HAT Power Supply
- microSD Card and Adapter
- Audio Cables (analog stereo or digital optical or coax)
- Your Personal Audio System (Active speakers, Amp, DAC, AVR, etc.)
- HDMI Cable and Other Peripherals (keyboard, mouse, etc.) for Raspberry Pi OS

OS Images

Interlude Audio offers three different OS images for various listening purposes. Read below and select the OS that suits your needs best. Download our images at interludeaudio.com.

Busker OS

The Busker OS image is the headless (no monitor or other peripherals enabled/required) Interlude Audio streaming OS with support for Spotify, Airplay, and Roon.

- Busker OS installs an instance of Roon Bridge for easy connections to the Roon Core already configured and running in your home or office. Find your newly connected Interlude Audio HAT in the device list, click enable, and you're all set.
- For Spotify, open the app as you normally would, select the stream that fits your mood and select your Interlude Audio HAT for playback.
- Airplay is just as simple and straightforward as you're already used to. Find the audio source that you desire, tap the Airplay button, and select your Interlude Audio HAT.

Volumio OS

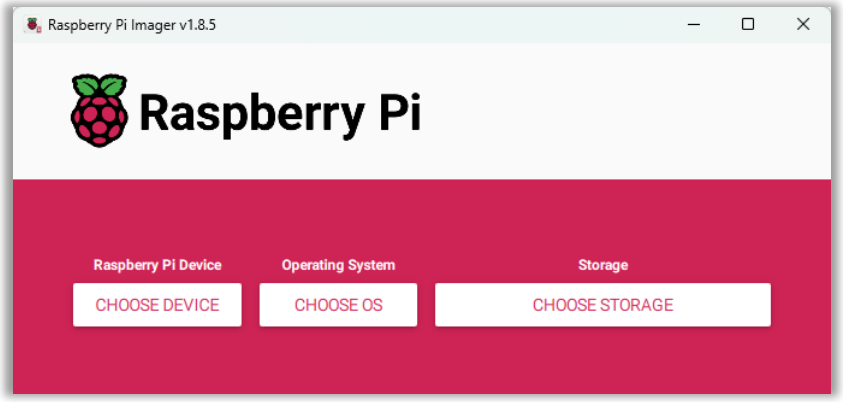
The Volumio OS image is designed to be a simple browser-based music player. Volumio is a highly optimized system for bit-perfect audio playback, compatible with all files formats, from mp3 to DSD. It should also allow easy access from other devices on the network. Play music locally, from a NAS, or other connected devices. Find more info at volumio.com.

Raspberry Pi OS

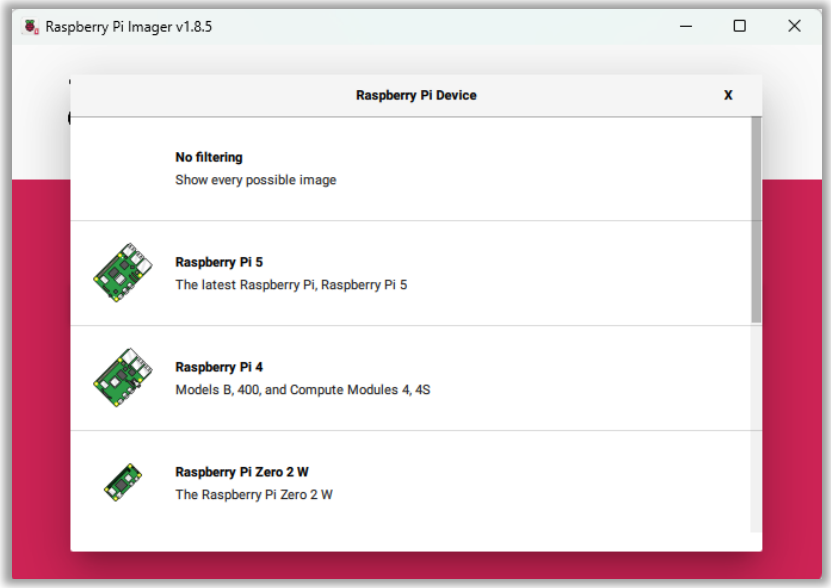
The Raspberry Pi OS image is generally intended for the hobbyist or the tinkerer; an audiophile who wants to explore the full functionality of the Raspberry Pi OS but experience superior sound quality above that of the onboard DAC. This image will provide you with a full kernel, filesystem, web browser, shell, and GUI for your standard desktop-style computing environment. This image will allow you to connect standard peripherals such as an HDMI display, keyboard, mouse, and various other devices. Single board computing that sounds like never before.

Busker and Volumio OS Installation Steps

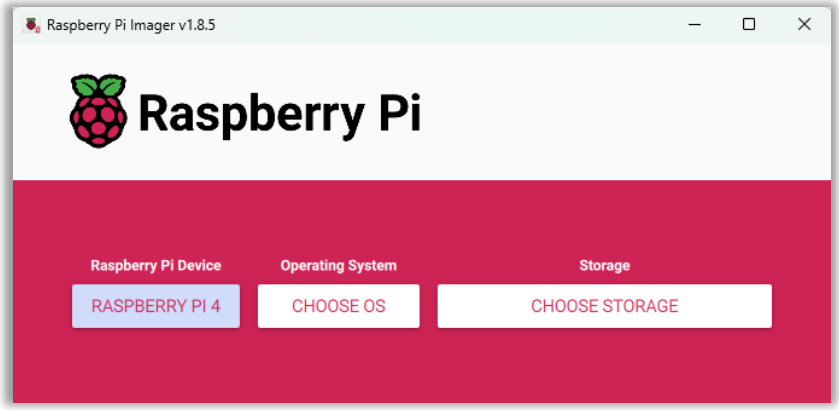
1. Download your desired OS from interludeaudio.com/support if you haven't already. Extract the files from the .zip for the OS you've chosen in order to expose the file you'll use for flashing. In the case of Volumio, you'll directly use the .img file (not the MD5). In the case of Busker OS, you'll use the resultant .zip.
2. Insert your microSD card into the microSD Adapter and insert into the SD card slot on your computer or laptop.
3. Open Raspberry Pi Imager.
    - If prompted, select **Yes** to the question, "Do you want to allow this app to make changes to your device?"
4. Select **CHOOSE DEVICE**.



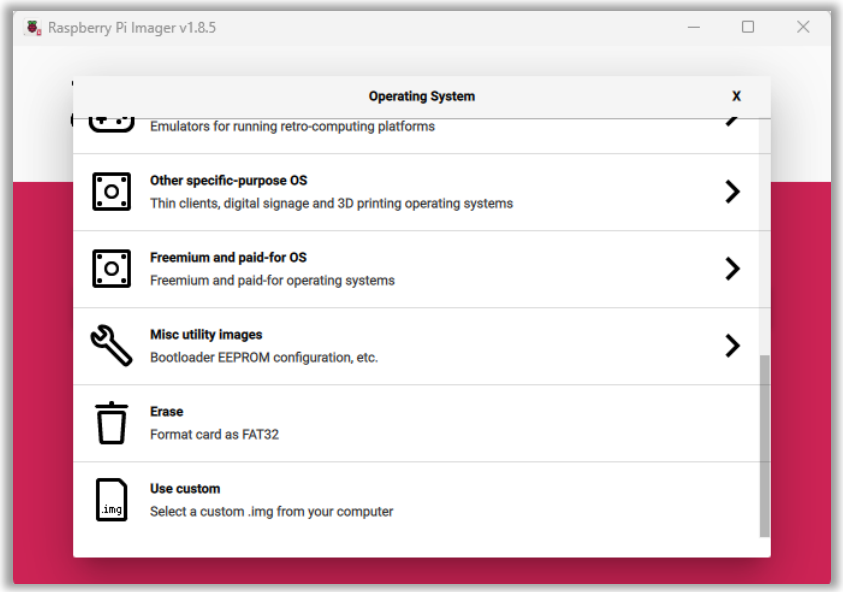
5. Select your specific Raspberry Pi from the list provided.



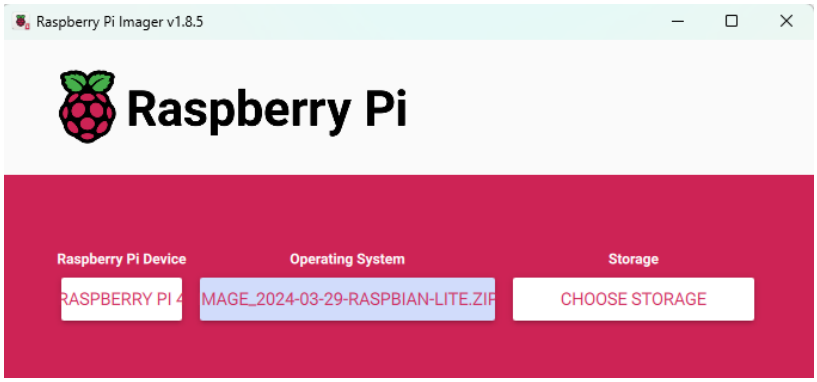
6. Select **CHOOSE OS**.



7. Scroll to the bottom and select **Use custom**.

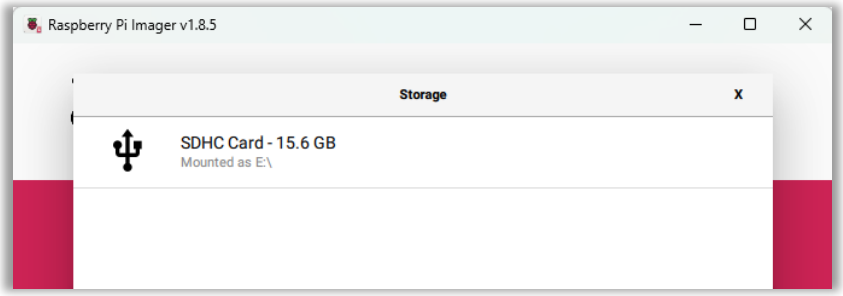


8. Navigate to the location where you downloaded your chosen Interlude Audio OS, select it, and select **Open**. The OS name will now be showing in place of **CHOOSE OS**.



9. Select **CHOOSE STORAGE**.

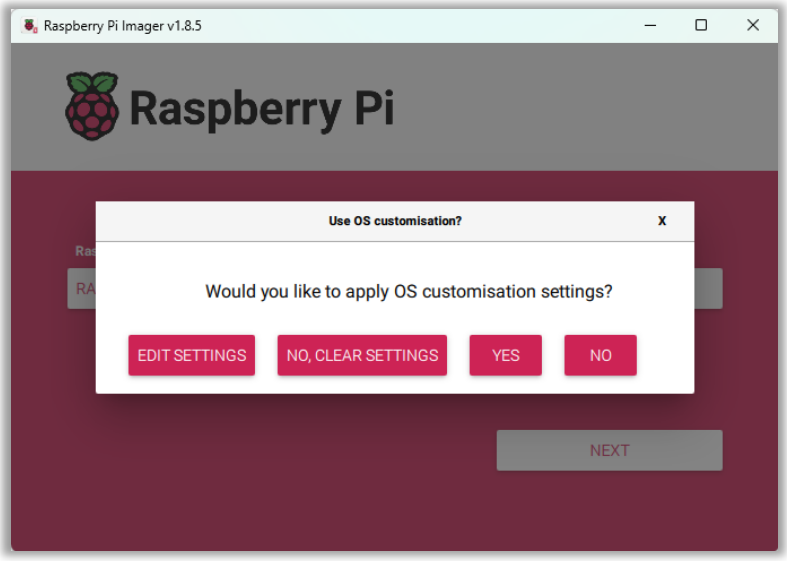
10. Select the SD card you'd like to write to. It's likely to be the only one listed.



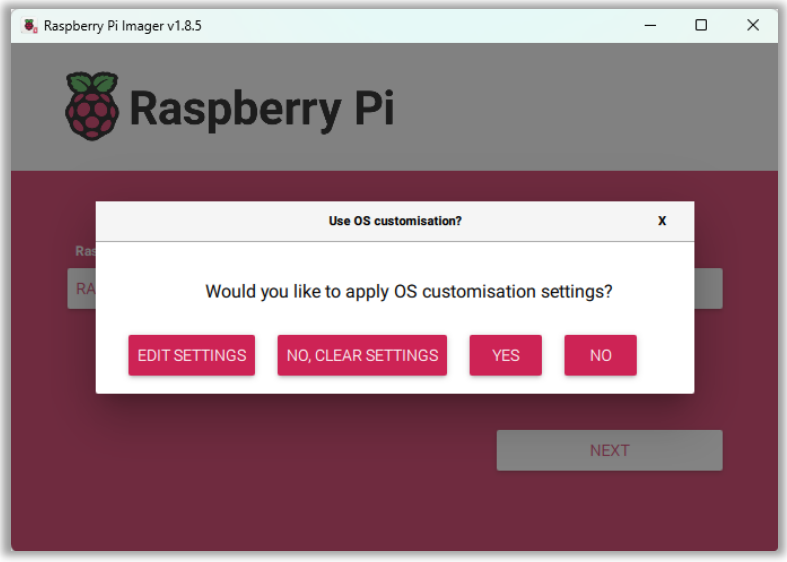
11. The name of your storage device will now be showing in place of **CHOOSE STORAGE** (in this case, it's **SDHC CARD**).

12. Select **NEXT.**

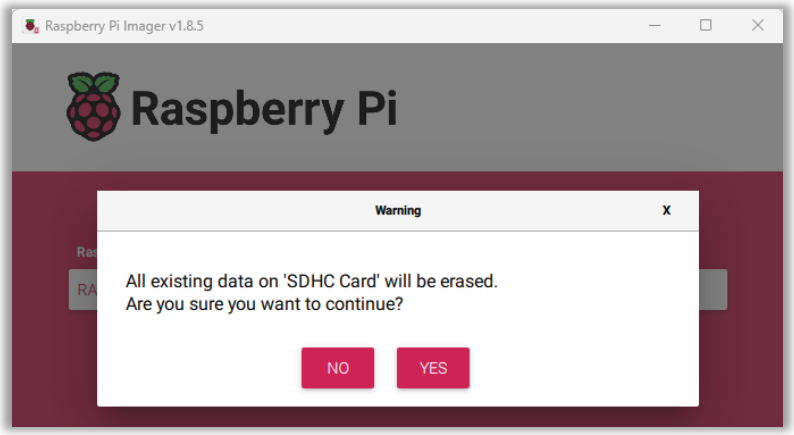
13. Your next actions will differ depending on which OS you're installing.
    - Busker OS
        - You will be prompted on whether you'd like to apply OS customization settings, such as a username and password for Linux login, configuring wireless LAN settings, and selecting a locale . Optionally **EDIT SETTINGS** and once you're happy with your settings, select **YES**.



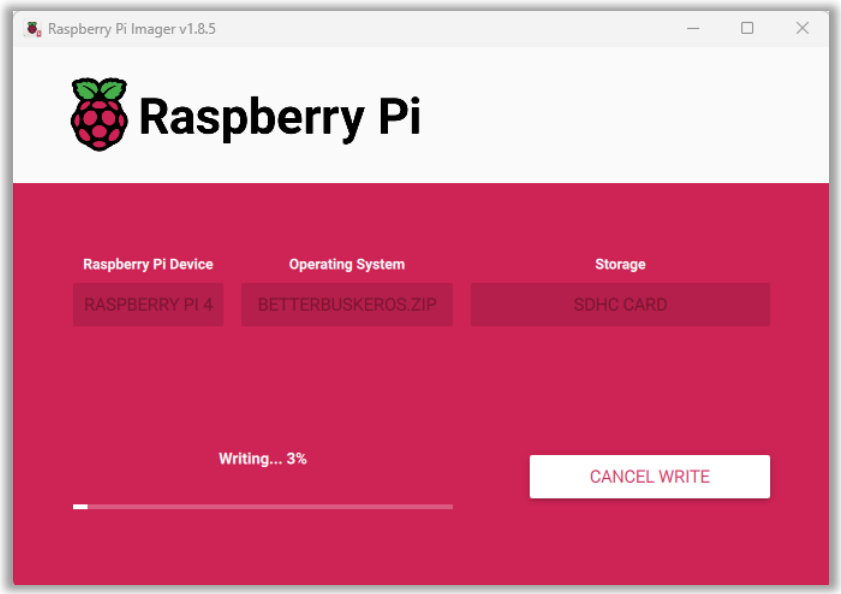
    - Volumio OS
        - If you are using Volumio OS, when prompted, DO NOT MODIFY THE OS CUSTOMISATION SETTINGS as this will interfere with the guided setup which is built into the Volumio environment. Select **NO**.



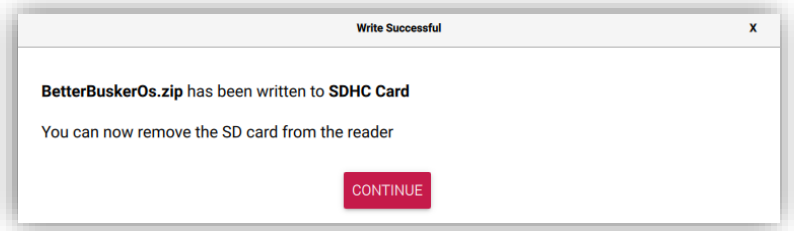
14. You will receive a warning that all existing data on the SD card will be erased and asked if you'd like to continue. When prompted, select **YES**.



15. The image will be decompressed, written, and verified. This may take several minutes.

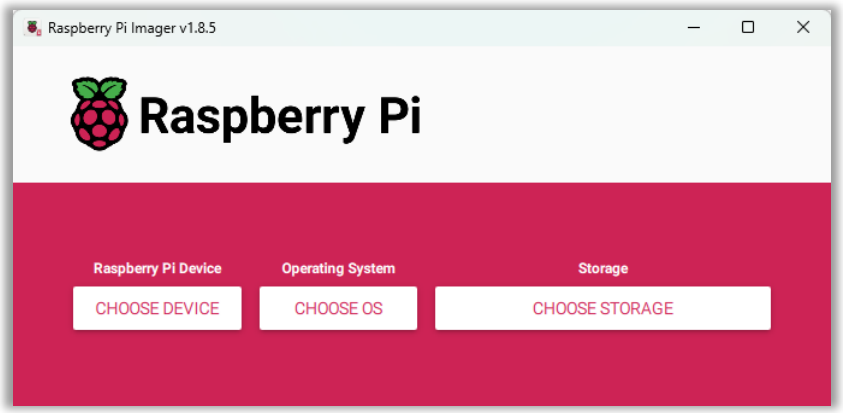


16. After the write process has completed, you will see a success message. Select **CONTINUE** and your microSD card will be ready for booting.

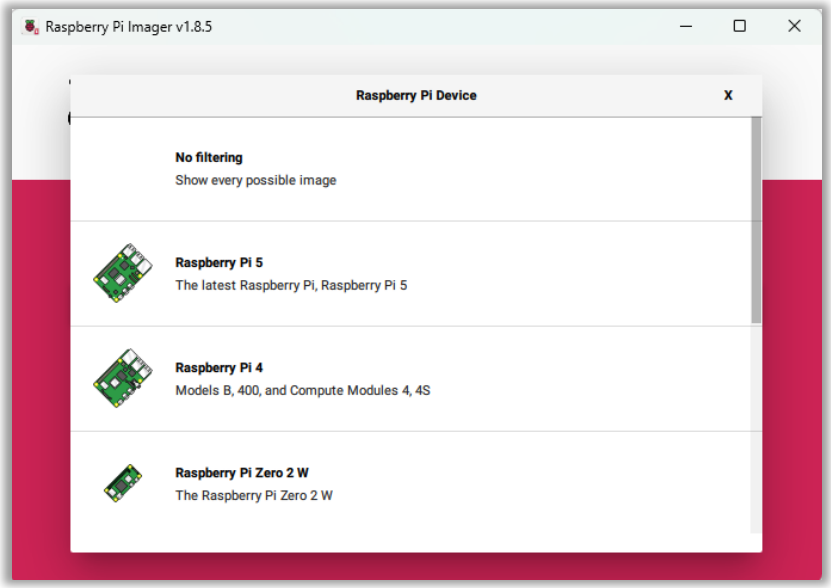


Raspberry Pi OS Installation Instructions

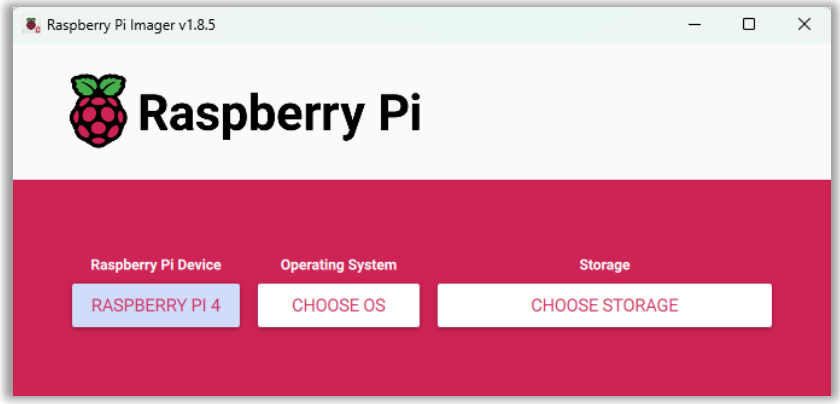
1. Insert your microSD card into the microSD Adapter and insert into the SD card slot on your computer or laptop.
2. Open Raspberry Pi Imager.
    - If prompted, select **Yes** to the question, “Do you want to allow this app to make changes to your device?”
3. Select **CHOOSE DEVICE**.



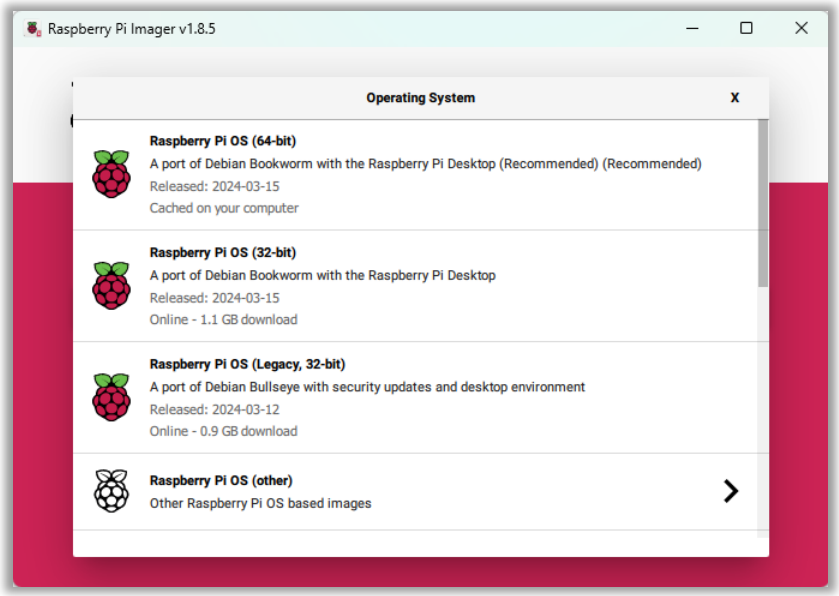
4. Select your specific Raspberry Pi from the list provided.



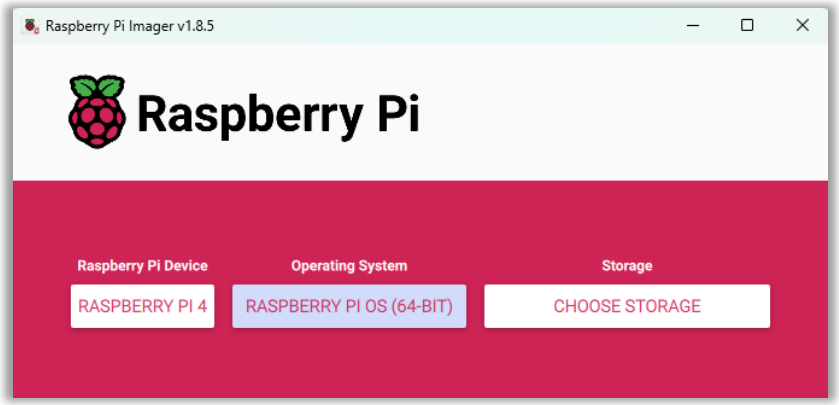
5. Select **CHOOSE OS**.



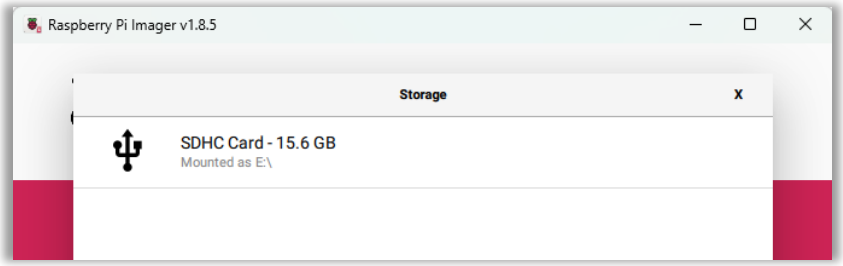
6. Select the Raspberry Pi Operating System from the list provided.



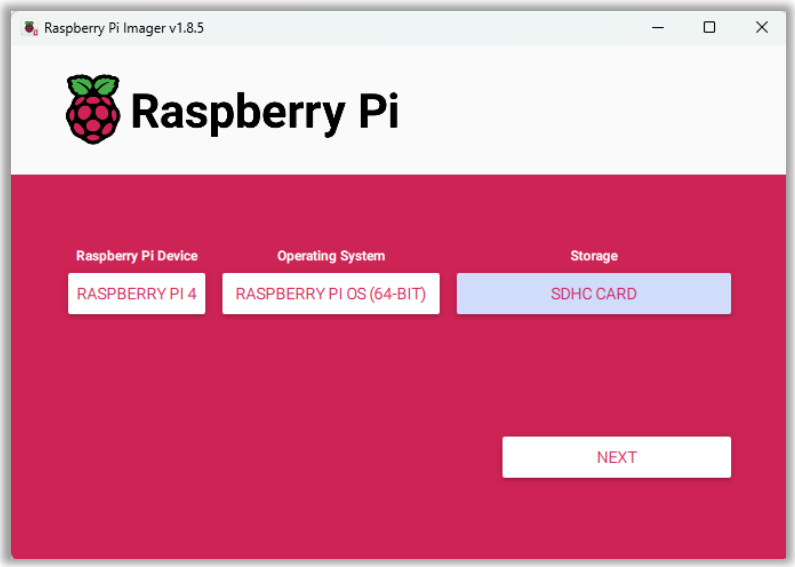
7. Select **CHOOSE STORAGE**.



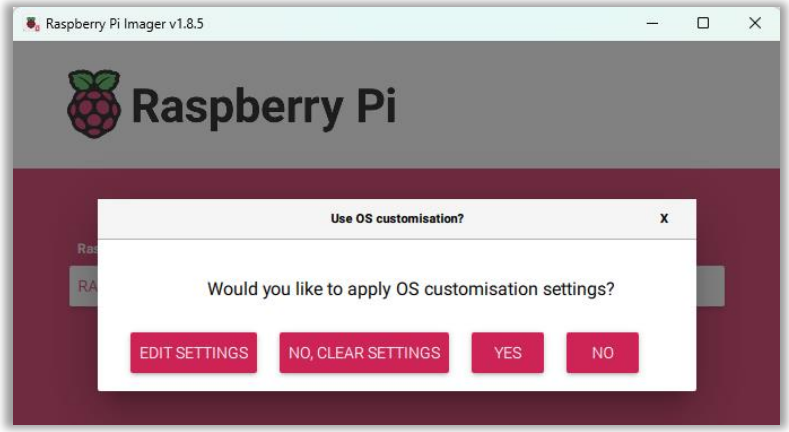
8. Select the SD card you'd like to write to. It's likely to be the only one listed.



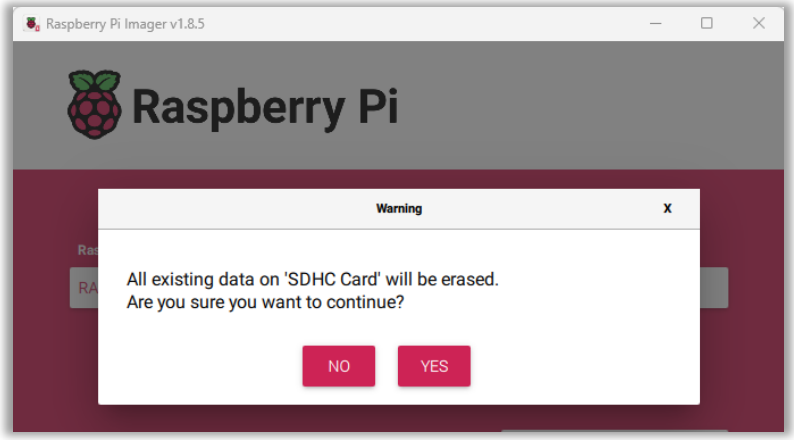
9. Select **NEXT**.



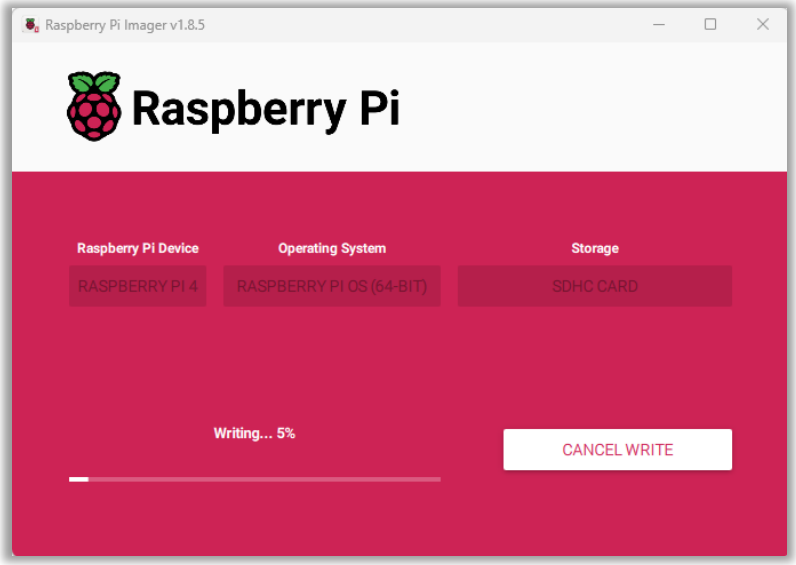
10. You will be prompted on whether you'd like to apply OS customization settings, such as a username and password for Linux login, configuring wireless LAN settings, and selecting a locale . Optionally **EDIT SETTINGS** and once you're happy with your settings, select **YES**.



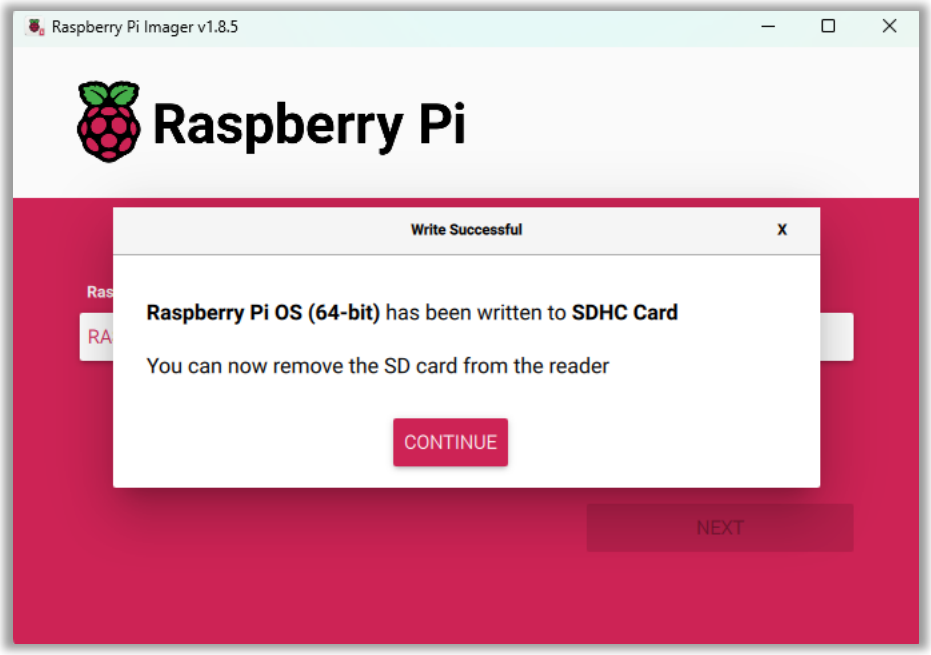
11. You will receive a warning that all existing data on the SD card will be erased and asked if you'd like to continue. When prompted, select **YES**.



12. The image will be downloaded, written, and verified. This will take several minutes.

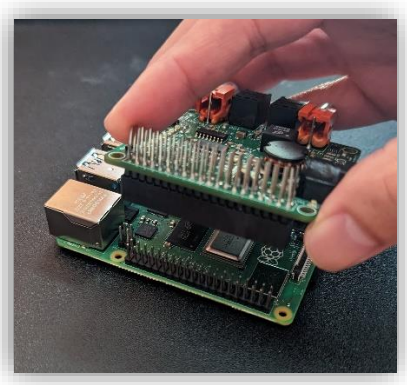


13. After the write process has completed, you will see a success message. Select **CONTINUE** and your microSD card will be ready for booting.

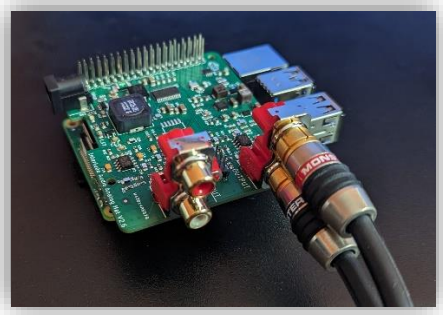


Assembling Your Interlude Audio HAT and Booting Your OS

1. Insert the microSD card written with your chosen OS image into the Raspberry Pi microSD slot on the underside of your Pi.
2. Attach your HAT to the Raspberry Pi ensuring that the 40-pin connectors are both situated in a way that the HAT will sit directly over the Rasberry Pi.



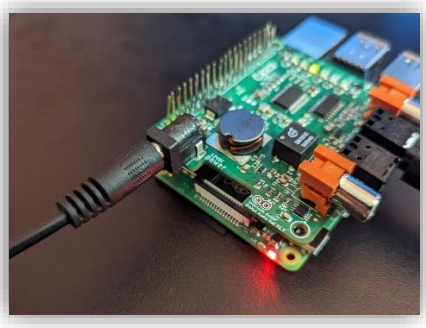
3. If you chose the Raspberry Pi OS, connect your micro HDMI cable to the Raspberry Pi and the other end to your monitor. Connect any other USB peripherals at this time, such as a keyboard and mouse. If you will be using wired ethernet to connect to your network and internet, connect the ethernet cable at this time as well.
4. Connect your required audio cables.
    - In the case of the Analog HAT, connect your RCA cables from the connectors on the HAT labeled OUTPUT to the desired input on your personal audio system. In the image below, the HAT Input is on the left and the Output is on the right.



    - In the case of the Digital HAT, connect your optical (black connector) or coax (orange connector) cable from the connectors labeled OUTPUT to the desired

input on your powered speakers, amp, or receiver. In the image below, the connectors from left to right are as follows: Coax Input, Optical Input, Optical Output, Coax Output.

5. Connect the barrel connector of your power supply to the black power input on your HAT and then connect the power supply to the outlet. There's no need to connect power to the Raspberry Pi because the power from the HAT will feed the whole stack.



Configuring Your OS and Playing Audio on Your Interlude Audio HAT

Booting Busker OS

When booting Busker OS for the first time, you'll need to wait up to 3 minutes for the Linux kernel to boot and for the initial install script to run. This will automatically install and configure the necessary software for Roon, Spotify, and Airplay interactions.

- Connecting to the HAT via Roon:
    1. Open Roon from your server and select **Settings** from the left menu.
    2. Within the Settings menu select **Audio.**
    3. Your Interlude Audio HAT will show up under the **roon** section with the name **raspberrypi** and the IP address of your device.
    4. Rename your Interlude Audio HAT to a meaningful name and you're ready to select it as an output device.
- Connecting to the HAT via Spotify:
    1. Open Spotify on your phone, tablet, or computer.
    2. Select the music you wish to listen to and click on the device icon.
    3. The Interlude Audio HAT will be displayed as raspotify (raspberrypi).
- Connecting to the HAT via Airplay:
    1. Connect your device to the same Wi-Fi network as your Interlude Audio HAT.
    2. Find the audio that you want to stream and tap the AirPlay button.
    3. Choose your Interlude Audio HAT from the device list.

Booting Volumio OS

When booting the Volumio OS for the first time and configuring, you'll have several options and settings to address. Follow the steps below or visit volumio.com for more information.

1. Decide how you would like to connect your Interlude Audio HAT to your WiFi network.
    - In the case of ethernet, open a browser on your computer and navigate to http://volumio.local
    - In the case of WiFi, on your computer, connect to the WiFi hotspot named 'Volumio' using the password 'volumio2'. Open a browser window and you should see the Volumio configuration screen. If not, navigate to http://volumio.local
2. Choose your **Language**.
3. **Name** your device and remember this <name> for later access to the web-UI.
4. Select your audio **Output**, by choosing the Interlude Audio Analog or Interlude Audio Digital HAT.
5. Choose the user **Experience** (simplified or advanced features).
6. If you're planning on connecting to Volumio via WiFi, configure your **Network** connection by entering the WiFi name and password for your home network.
7. After completing the configuration of your instance of Volumio, the device will reboot.
    - If you completed the Volumio configuration using the hotspot, be sure to reconnect your computer to your home WiFi network.
8. Connect to the Volumio OS using the device name you created in your configuration, which will look like 'http://<name>.local'.

Booting Raspberry Pi OS

Booting the Raspberry Pi OS is rather straightforward. Upon boot, you should see the standard Raspberry Pi logo, kernel messages, and finally the Linux desktop environment. With the Raspberry Pi OS, play music as you normally would within a Linux environment. Simply right click the speaker icon from the right side of the top bar and select **snd_IA_Analog_Hat** or **snd_IA_Digital_Hat** to route audio to the soundcard associated with your HAT. Play music from a browser (Youtube, Pandora, Spotify, etc.), copy music to the filesystem and play locally, or connect to an external music source such as USB drive, NAS, or media server. There are many ways to play audio within the Raspberry Pi Linux environment, so select what works best for you!

Support/Contact

For additional support or troubleshooting assistance, visit our website at interludeaudio.com/support or email us at support@interludeaudio.com.