

# 1. Setting up your ROON Server

By David Das

## Contents

Overview.....	2
The 4 Essential Items you need to buy .....	4
Setting up a ROON Account.....	11
Installing the ROON OS into your MiniPC .....	12
Ripping your Music CDs using dBpoweramp Music Converter .....	29
Tips from David Snyder on Building your Local Music Library .....	45
Copying your Music Library to the SanDisk 512GB microSD card .....	46
Installing the ROON Remote App .....	49
Connecting your FiiO SR11 Music Streamer to your LAN .....	59
Exploring the ROON User Interface .....	71
Learning more about ROON .....	111
Summary.....	113

## Overview

I was completely blown away auditioning the [Legacy Audio Focus XD](#) active speakers at David Snyder's new home on Sunday, March 30<sup>th</sup> 2025.



What made them sound so spectacular and perfect was the state of the art Digital Room Correction that David had applied to his setup. The speakers were corrected both in *amplitude* and *time* domains at the listeners position. [ACOURATE](#) was used to measure each speaker and generate the FIR Filters which were imported into the Convolution Engine within ROON.

I was so impressed with the performance of this system that I was compelled to write a review in our April 2025 Newsletter.

This was my first hands on experience using [ROON](#). David showed me how easy it was to search through your entire music library including millions of high resolution tracks on [Qobuz](#) and [Tidal](#) by Artist or Song. Within a few minutes I realized the value of ROON and why it has become an indispensable tool for music lovers.

Not only does ROON offer a unified simple user interface to browse your local music library and streaming services but it also allows you to store and recall multiple profiles for all your 2-

channel setups within your home. This allows you to instantly switch and compare different room correction filters on the same 2-channel setup.

Your room is the biggest factor that determines how well your speakers would perform. The benefits of Digital Room Correction are immediately audible. The improvements you hear far outweigh those from swapping expensive DACs, Power Amps and cables. There is a reason why professional mixing and mastering studios use extensive room treatment along with Digital Room Correction software like [GLM](#).

Once you hear a professionally calibrated setup with all its drivers time aligned, there is no going back. All the instruments come alive. The music snaps into focus.

I was curious to know what it would take to duplicate what David has done in my own listening environment.

David immediately sent me a list of items I would need to buy and got me set up with my own ROON Server within six days of my initial visit. I was pleasantly surprised to find how little it costs and how simple the process is.

This article will go through the entire process of setting up your own ROON Server and building your local music library:

- You would have a ROON Server running on a stripped down version of Linux on a Mini PC.
- You would be connecting your ROON Server to your Router using an Ethernet Cable.
- You would be connecting your Music Streamer to your ROON Server via another Ethernet Cable.
- The USB or S/PDIF (Coaxial or Toslink) Output from your Music Streamer would feed your DAC. The Analog Output from your DAC will feed your power amp.

It is important that your Music Streamer is able to handle lossless streaming and is ROON READY.

In the next article you will learn how to take initial measurements of your speakers using the Room EQ Wizard (REW).

Let's begin!

## The 4 Essential Items you need to buy

### Item #1: Mini PC to run your ROON Server

GMKtec Mini PC N97 Preinstalled Windows 11 Pro, G5 Micro Desktop Computer, 12th Gen Intel Alder Lake N97 (up to 3.60GHz) 12GB DDR5 256GB Hard Drive for Business, School, Office.

<https://www.amazon.com/Micro-Mini-PC-Computers-N5105/dp/B09Q8Z6VB7/>

\$143.99



Here are the official specifications of this NucBox G5:

<https://www.gmktec.com/products/intel-alder-lake-n97-mini-pc-nucbox-g5>

**Item #2:** ROON Ready Lossless Music Streamer to feed your DAC

FiiO SR11 AirPlay Audio Streamer Receiver, WiFi Multi-Room Streamer, Stream Hi-Res Audio from Spotify, Amazon Music, Tidal (Black).

<https://www.amazon.com/FiiO-SR11-Streamer-Receiver-Multiroom/dp/B0DFCQPZQY/>

\$99.99



**Item #3: MicroSD Card to store your Local Music Library**

SanDisk 512GB Extreme microSDXC UHS-I Memory Card with Adapter

<https://www.amazon.com/SanDisk-Extreme-microSDXC-Memory-Adapter/dp/B09X7C2GBC>

\$41.99



You will be storing your local Music Library on this microSD Card that goes inside the Mini PC.

**Note:** The GMKtec N97 Mini PC supports microSDXC cards. This standard supports a maximum capacity of 2TB. If your music library is larger, you should use a USB drive of larger capacity instead.

**Item #4: USB Thumb Drive to install the ROON OS on your Mini PC**

SAMSUNG FIT Plus 3.1 USB Flash Drive, 128GB

<https://www.amazon.com/Samsung-MUF-256AB-AM-Plus-256GB/dp/B07D7PDLXC>

\$14.99



You need a USB Thumb Drive to install the ROON OS on the Mini PC. Once this is done, you can repurpose this USB drive for storing the ROON database backups.

Total cost for these 4 essential items:

Mini PC	\$143.99
Music Streamer	99.99
MicroSD Card	\$41.99
USB Thumb Drive	\$14.99

**Total**                    **\$300.96**

This is all that it takes to set up your own ROON Server.  
David's solution is cheaper than buying the [ROON Nucleus One](#).

The [ROON Remote App](#) can be installed on any Android or iOS device. The User Interface looks gorgeous on my 12.9" iPad Pro and is very responsive.

If you do not have a Tablet, David recommends the [Google Pixel Tablet](#) starting at \$279. The [optional case](#) adds \$79 to the cost.

You can use any DAC of your choice. I am using an [RME ADI-2 DAC](#). I find the Volume, Treble and Bass controls on the included remote to be very handy with instant switching between the Coax, Optical and USB inputs.



PRODUCTS  
ADI-2 DAC FS

Ultra-fidelity PCM/DSD 768 kHz DA Converter

**\$ 999.00**

If you do not have a DAC, the [S.M.S.L. D-6s](#) makes an excellent choice for \$200. This DAC was used in the Amp Comparison Event.



Here are David's recommendation for good [Ethernet Cables](#), [COAX Cables](#) and [Toslink cables](#).

Amazon delivered these 4 essential items overnight.



## A word of caution!

The USB-C power cable tethered to the GMKtec N97 Mini PC power adapter supplies 12V. It is not suitable for charging your phone or tablet which expects 5V. It will fry your device.



**Note:** The microSD Card goes into the slot face down.



## Setting up a ROON Account

Click on this link to start your 14-day free trial of ROON and receive a free month of ROON when your yearly subscription starts:

<https://ROONlabs.com/r/4Sjl4g==>



Start a free 14-day Roon trial today and you'll receive a free month of Roon when your yearly subscription starts!

[START YOUR FREE TRIAL](#)

### Monthly

\$14.99 / month

### Yearly

\$149.88 / year

### Lifetime

\$829.99 one time

### Note:

You need to enter your Billing Information to start your 14-day free trial.

The Monthly Subscription is \$14.99

The Yearly Subscription is \$149.88

The Lifetime Subscription is \$829.99

You will not be charged if you cancel within 14-days.

## Installing the ROON OS into your MiniPC

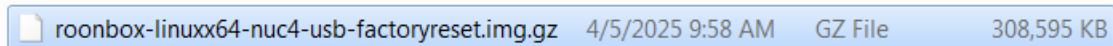
Here is an article that explains how ROON works.

<https://ROON.app/en/how-ROON-works>

Your GMKtec N97 mini PC comes preinstalled with Windows 11 Professional. You would be wiping this out and installing the ROON OPTIMIZED CORE KIT (ROCK) on a stripped down version of Linux that is specifically built to run ROCK and nothing else.

Download this ROON Linux Operating System Image File:

<https://download.ROONlabs.net/builds/ROONbox-linuxx64-nuc4-usb-factoryreset.img.gz>



**Note:** It is not necessary to unzip this ROON Factory Image File.

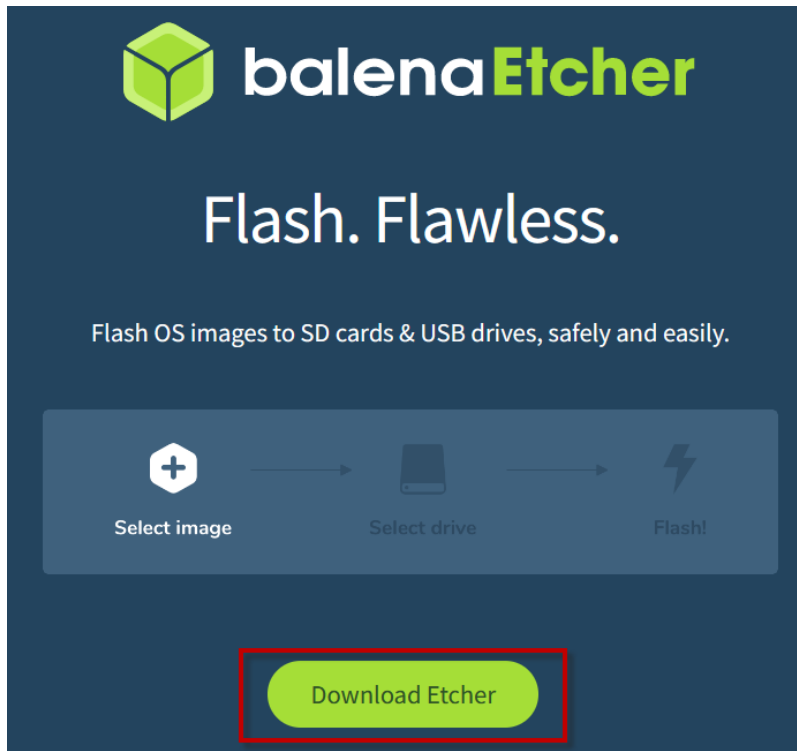
In order to install this OS Image File into your mini PC, you need to create a **Bootable Flash Drive**.

Simply copying this image file into your USB flash drive will not work.

To complete this task you need a program to create a bootable Flash Drive from this OS Image File.

Download **Etcher**.

<https://etcher.balena.io/>



## Download Etcher

ASSET	OS	ARCH	
ETCHER FOR WINDOWS (X86 X64) (INSTALLER)	WINDOWS	X86 X64	<a href="#">Download</a>
ETCHER FOR MACOS	MACOS	X64	<a href="#">Download</a>
ETCHER FOR MACOS (ARM64)	MACOS	ARM64	<a href="#">Download</a>
ETCHER FOR LINUX X64 (64-BIT) (ZIP)	LINUX	X64	<a href="#">Download</a>
ETCHER FOR LINUX (LEGACY 32 BIT) (APPIMAGE)	LINUX	X86	<a href="#">Download</a>

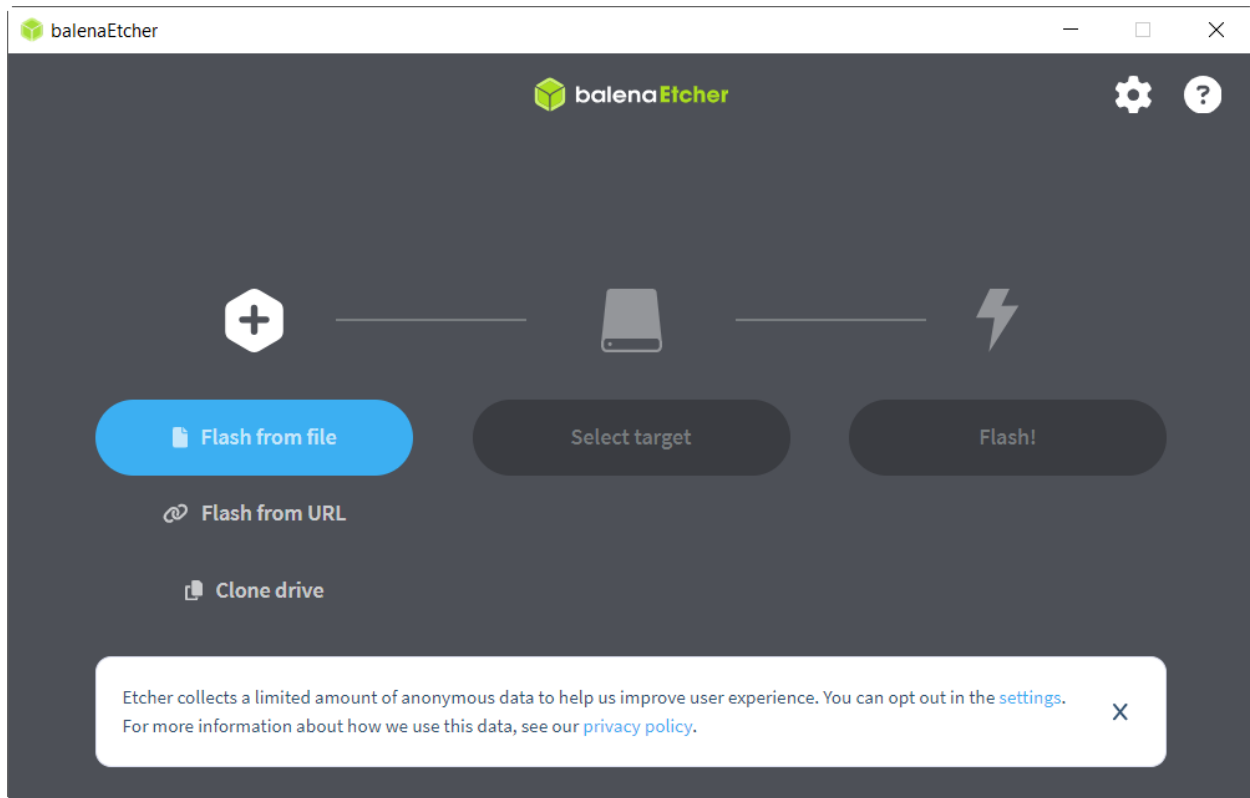
balenaEtcher-2.1.0.Setup.exe	4/5/2025 10:01 AM	Application	177,747 KB
------------------------------	-------------------	-------------	------------

**Note:** This program cannot be installed on a Windows 7 PC. You need a PC running Windows 10 or 11.

Insert the Samsung FIT USB 128 GB Flash Drive into an empty USB slot on your PC.

**Note:** You can use any spare USB Flash Drive 2GB or larger. Just be aware that all existing data will be deleted.

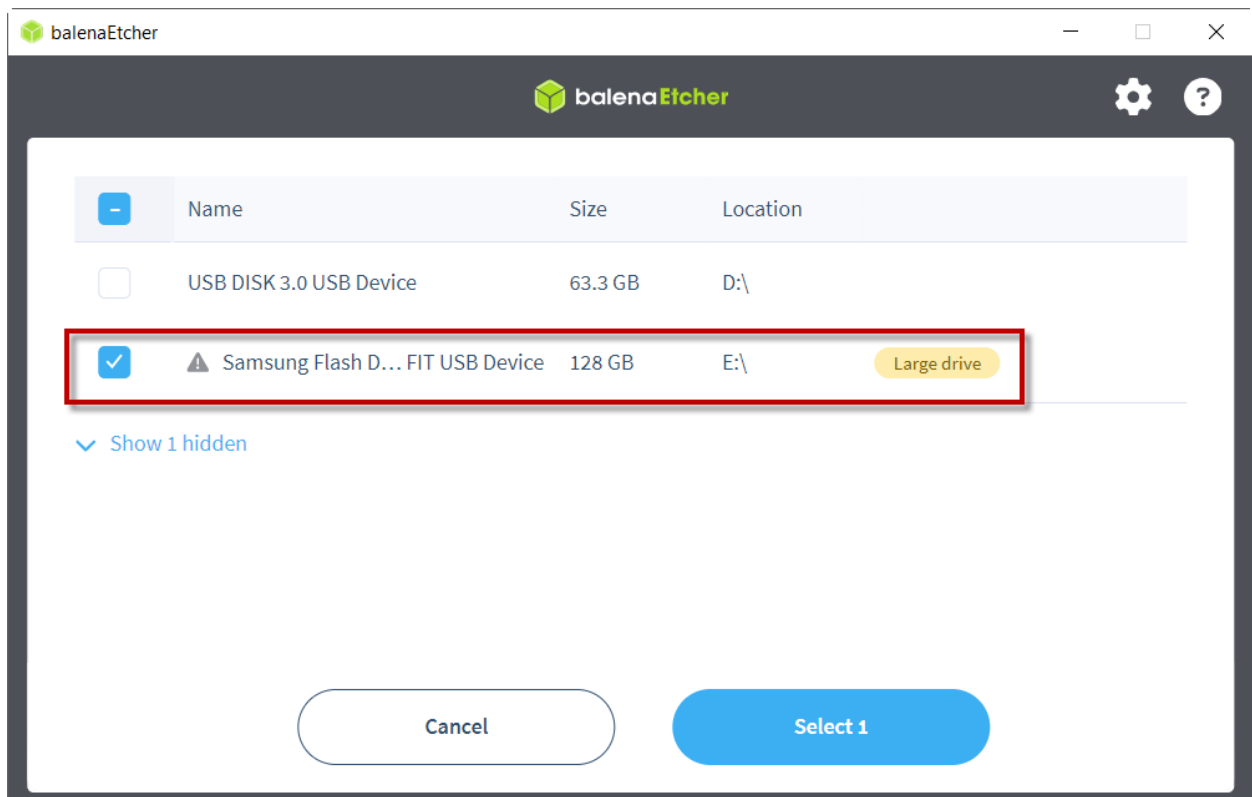
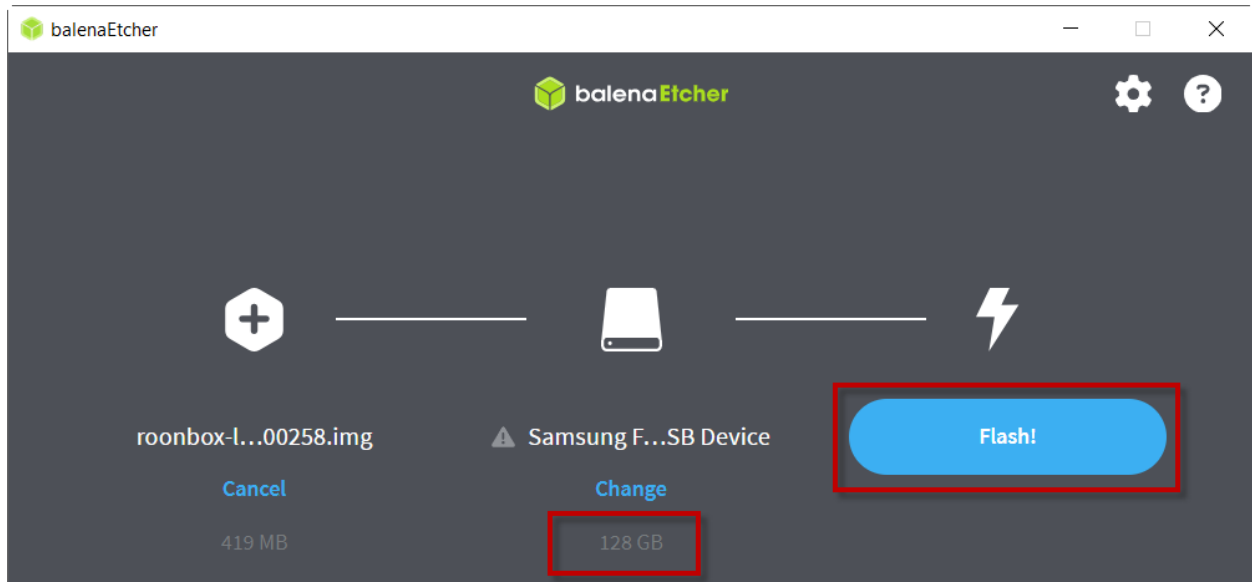
Run **balenaEtcher-2.1.0Setup.exe**



You need to specify two things before you Flash:

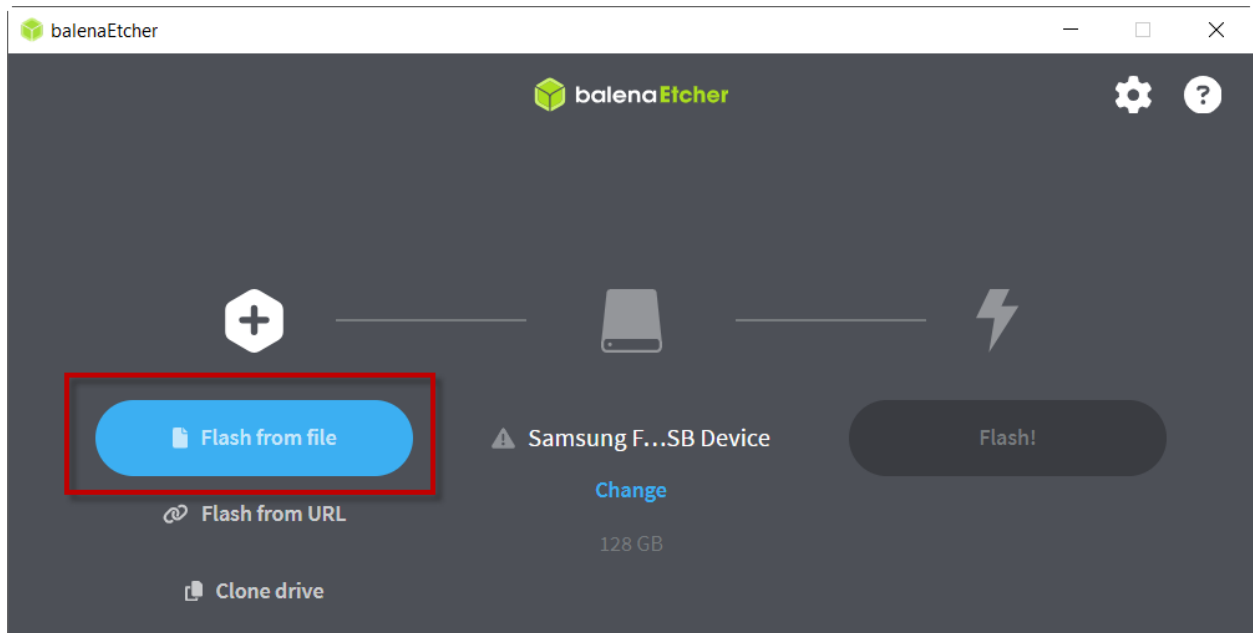
1. Select the Target to be the Samsung FIT 128 GB Flash Drive
2. Specify the OS Image File

Press the **Select Target** button and **Change** the target to the 128GB Samsung FIT Flash Drive.



**Note:** It is very important that you select the correct Flash Drive. All contents on this drive will be wiped out.

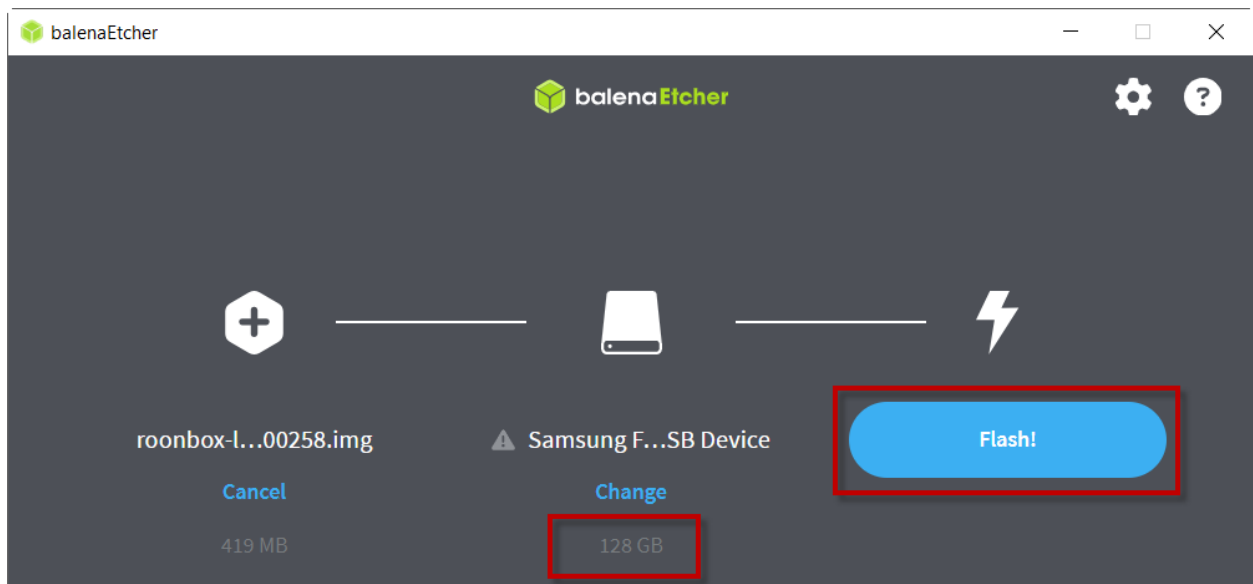
Click on the **Flash from File** button.



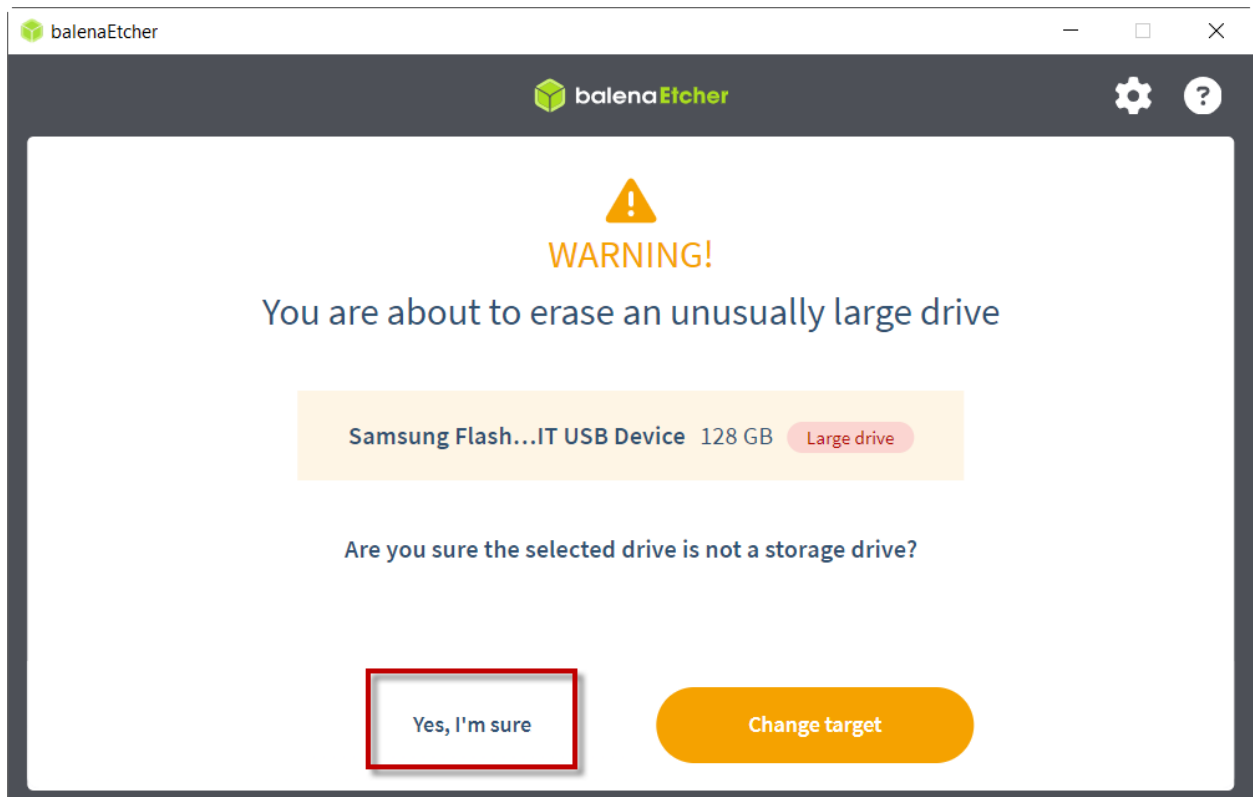
Select the ROON Factory Image File that you downloaded:

C:\Data\Devices\ROON\ROON Linux Image\ROONbox-linuxx64-nuc4-usb-factoryreset.img.gz\

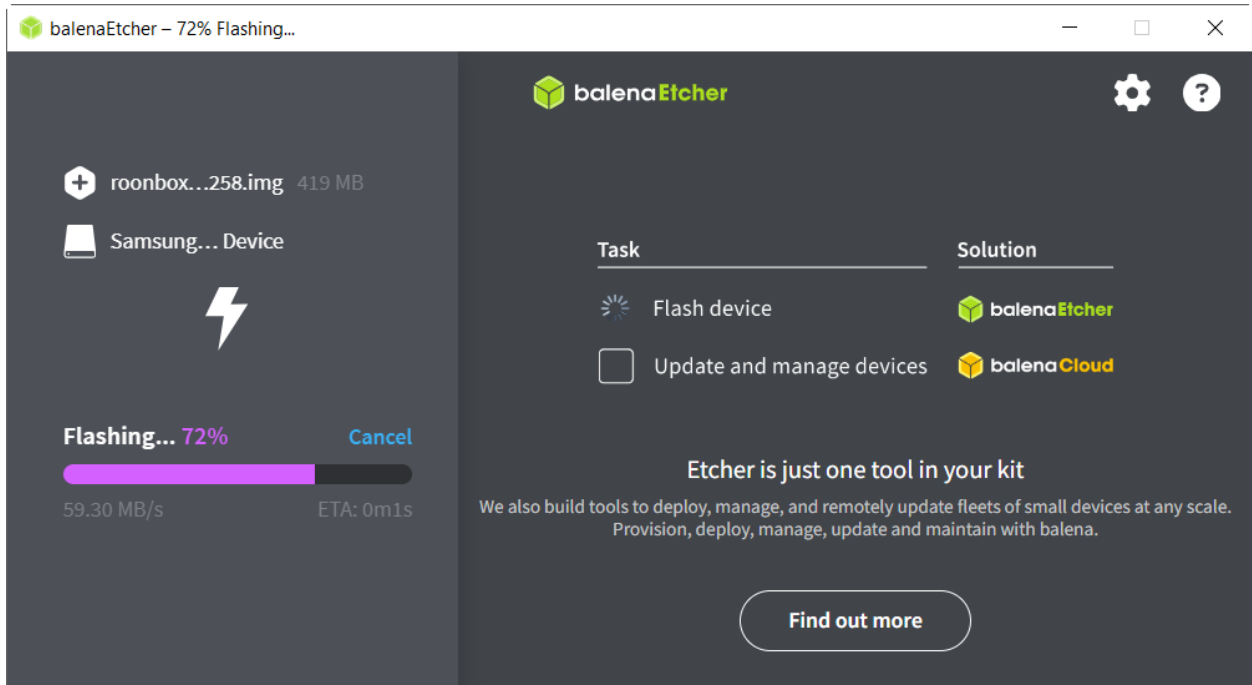
Click on the **Flash** button.



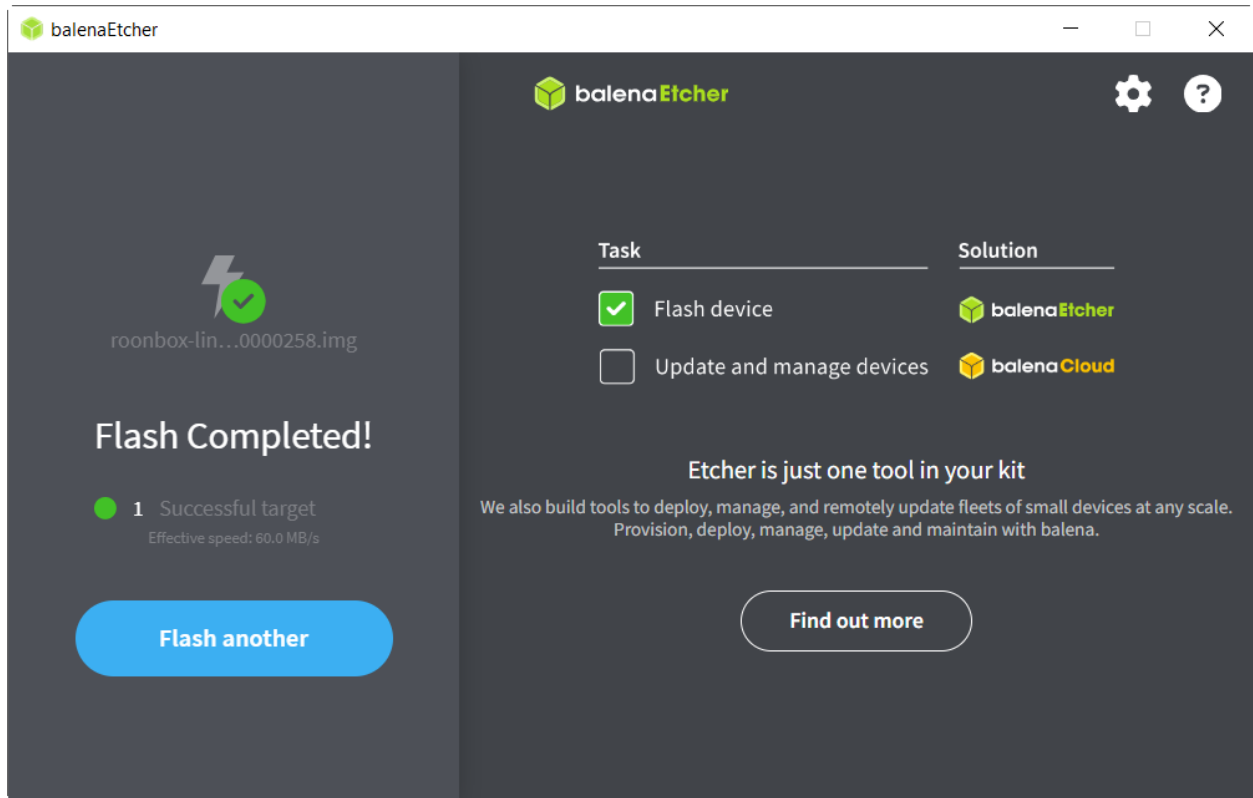
You will get this warning message since it is unusual to flash such a large capacity USB drive.



Yes, I'm sure



Within a few seconds you will have a bootable USB drive.



Eject the Samsung FIT 128 GB USB Drive.

Label this USB drive as ROON and insert it into the rear USB port on the GMKtec device.



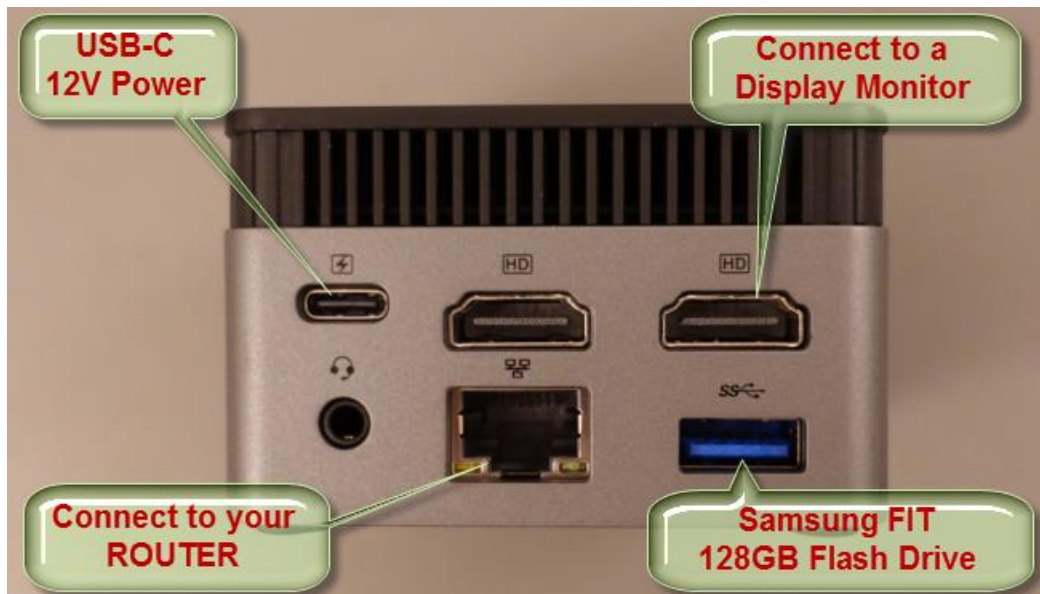
Connect a wired USB keyboard to the mini PC. You do not need a mouse.

Connect a display monitor to the mini PC via one of the HDMI ports.

Connect your mini PC to your Router using a CAT5e Ethernet Cable.

Connect the 12V Power Adapter to your mini PC using the USB-C power cord.

Make sure you have the Samsung FIT 128 GB Flash Drive inserted into the rear USB port.



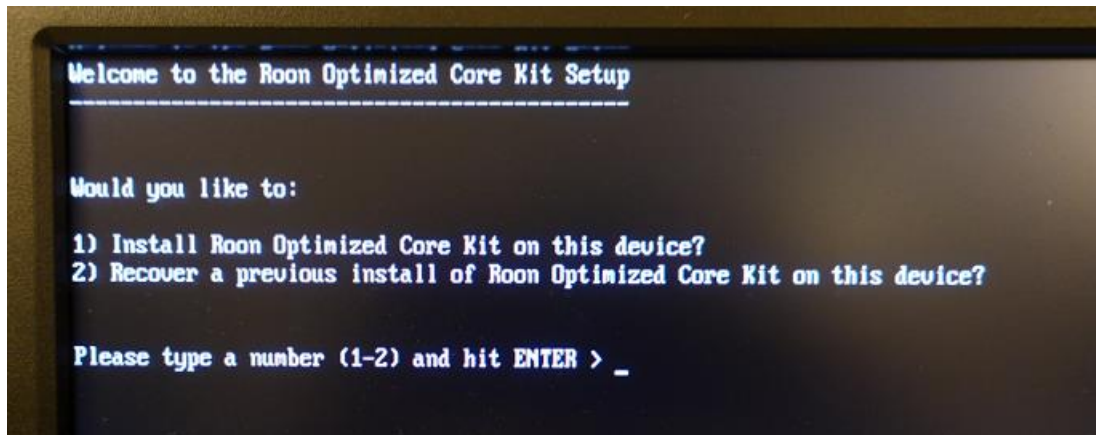
Press the **Power Button** on the mini PC



The GMKtec mini PC will boot off the Samsung FIT 128 GB Flash Drive.

**Note:** There is no need to change the Boot Order. The GMKtec BIOS comes factory set to boot off the Flash Drive.

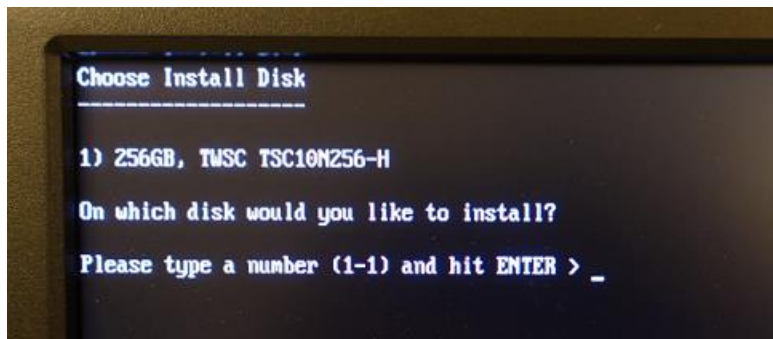
This initial Welcome Screen will appear on your Display Monitor.



Enter **1** on your Keyboard.

You want to install the ROON Optimized Core Kit on this device.

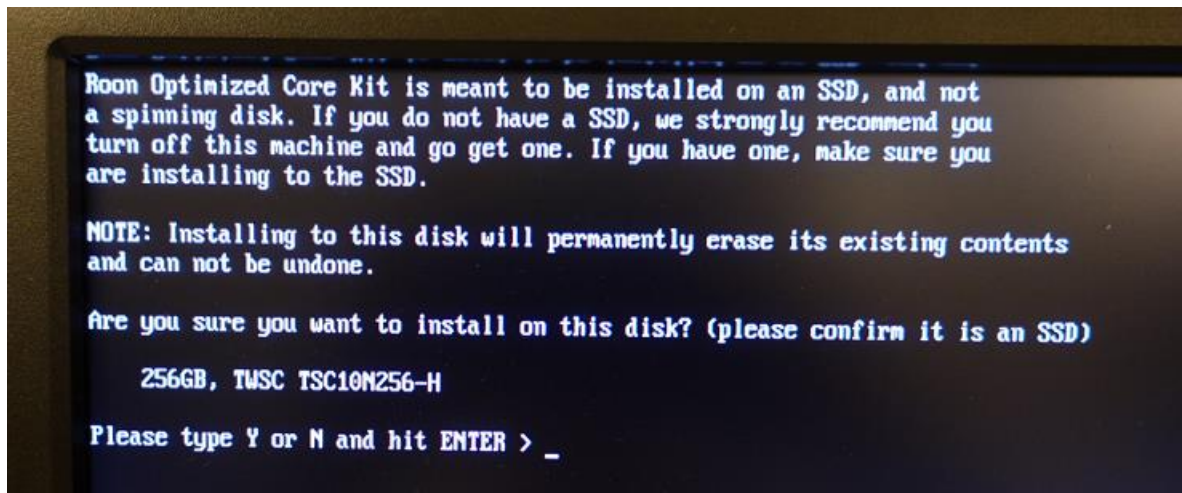
The next screen will ask you to select the disk where you would like to install ROCK.



The GMKtec has a single 256 GB internal SSD drive.

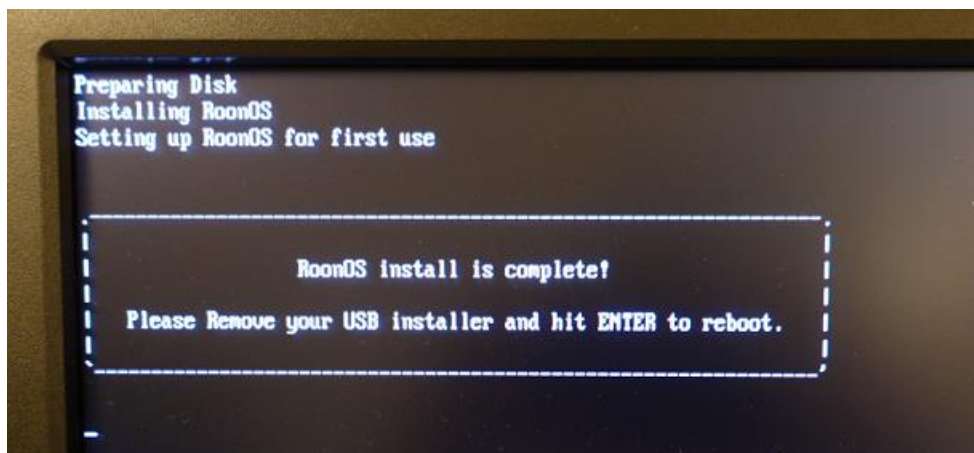
Enter **1** on your Keyboard.

The 3<sup>rd</sup> screen will ask you to confirm with a Y.



Enter **Y** on your Keyboard.

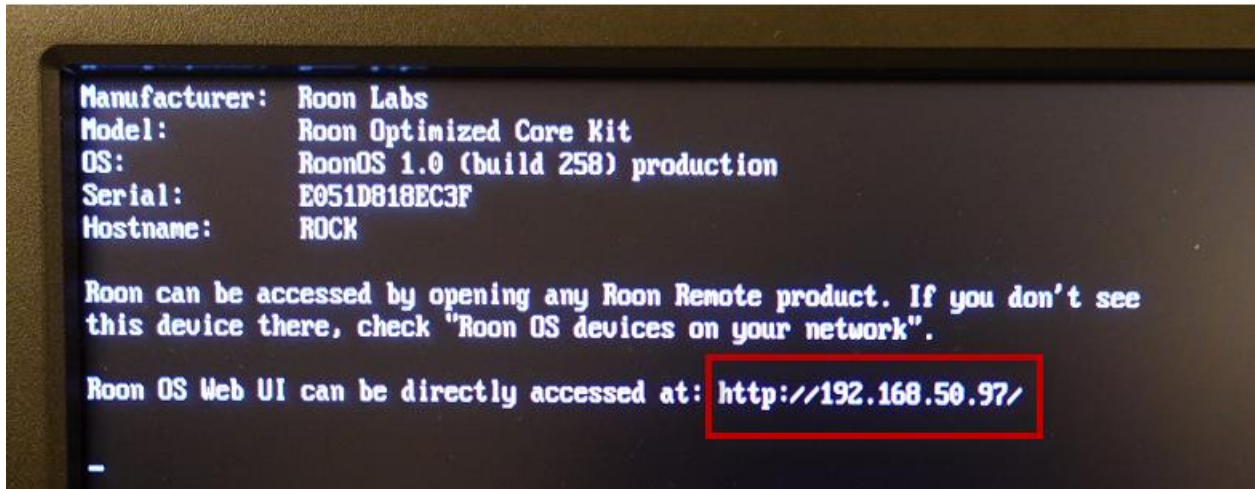
Within a few moments, you will get a message stating that ROONOS install is complete.



Remove the Samsung FIT 128 GB USB drive from the rear USB port.

Press **ENTER** to reboot your mini PC.

You will see a URL to access the ROON OS Web User Interface.



Open Chrome and enter this address (Do not use https)

<http://192.168.50.97>


You will see a message about **Missing Codecs**

The screenshot shows the Roon OS Web User Interface. At the top left is the "roon" logo and "Roon Optimized Core Kit". A red power button icon is in the top right corner, with a red callout bubble pointing to it labeled "Power button". The main content area is titled "System Status" with "Serial #E051D818EC3F" below it. There are three main sections: "Operating System" with "OK" status and a "Reinstall" button; "Roon Database &amp; Settings" with "OK" status and a "Reset" button; and "Roon Server Software" with "Missing Codecs" status and a blue button with a question mark. The "Roon Server Software" section is highlighted with a red box. Below this is the "Tailscale" section, which says "Not signed in" and has a "Sign in" button. A paragraph of text describes Tailscale as a private, secure connection app.

Here are the steps to add the Missing Codecs.

Download this 40MB File:


<https://johnvansickle.com/ffmpeg/builds/ffmpeg-git-amd64-static.tar.xz>

 ffmpeg-git-amd64-static.tar.xz	4/5/2025 9:59 AM	XZ File	40,981 KB
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You will get this 165MB file when you unzip this file.


**Note:** You can use 7-Zip to do the unzipping.

<https://www.7-zip.org/>








 ffmpeg-git-amd64-static.tar	4/5/2025 9:59 AM	TAR File	165,080 KB
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Unzip this file using 7-Zip one more time.

You will get this Folder.

 ffmpeg-git-20240629-amd64-static	6/29/2024 1:38 PM	File folder	
--	-------------------	-------------	--

Within this folder you will find a file named **ffmpeg**

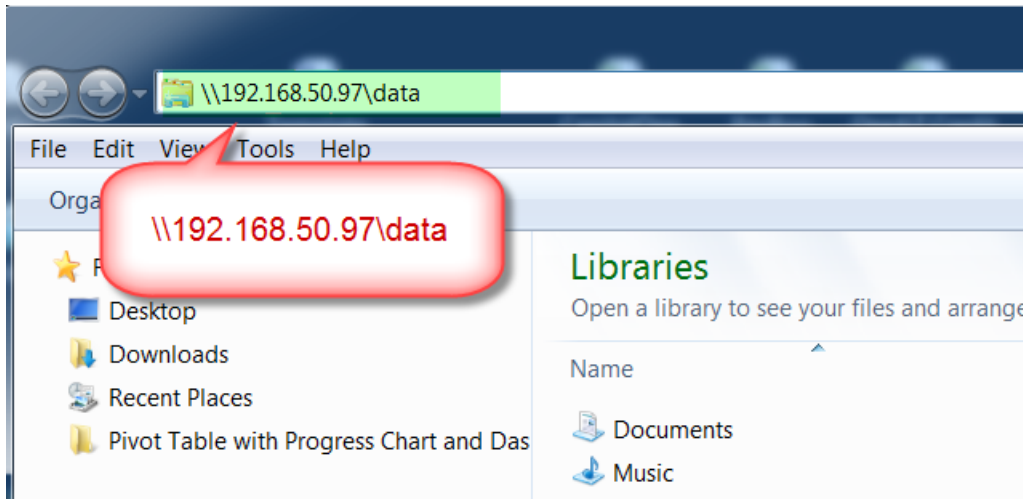
 manpages	6/29/2024 1:38 PM	File folder	
 model	6/29/2024 12:58 PM	File folder	
 <b>ffmpeg</b>	6/29/2024 1:38 PM	File	78,056 KB
 ffprobe	6/29/2024 1:38 PM	File	77,895 KB
 GPLv3.txt	6/29/2024 1:38 PM	Text Document	35 KB
 qt-faststart	6/29/2024 1:38 PM	File	679 KB
 readme.txt	6/29/2024 1:38 PM	Text Document	3 KB

This is the missing file.

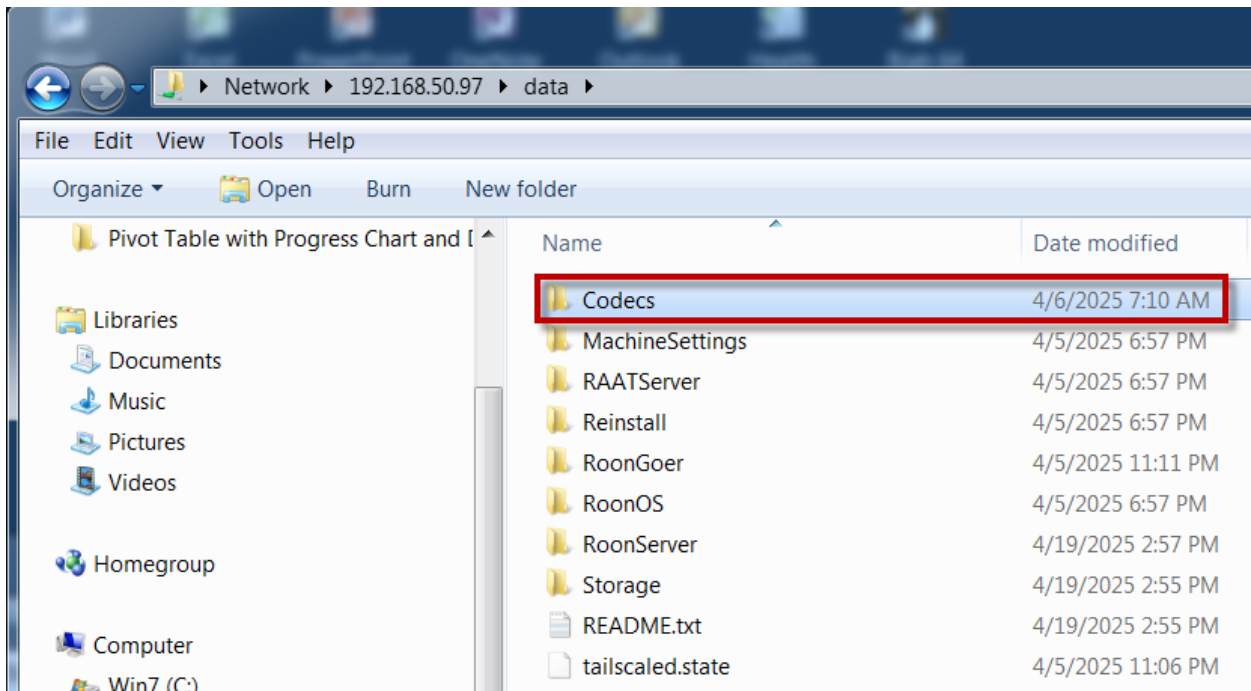
This is the only file you would need.

Open the **Windows File Explorer** and enter:

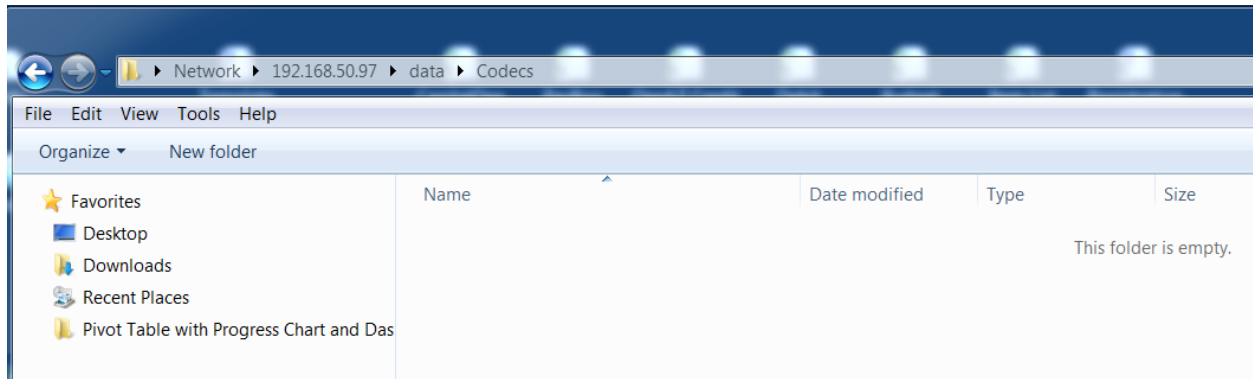
<\\192.168.50.97\data>



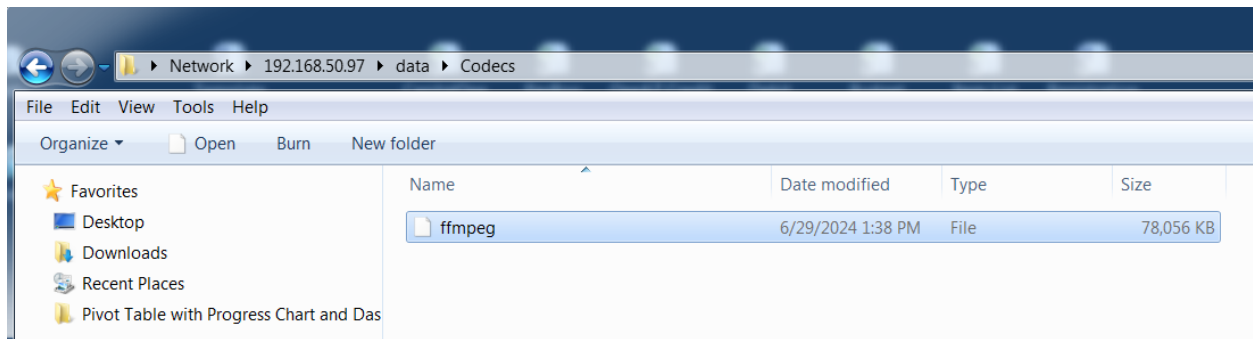
Open the **Codecs** folder



You will find that the Codecs folder is empty.



Copy the 78MB **ffmpeg** file into this Codecs folder.



This is all you need to populate the Codecs folder to fix the issue with Missing Codecs.

*Why doesn't the ROON OS installation kit come preinstalled with this codec?*

Here is the reason:

<https://help.ROONlabs.com/portal/en/kb/articles/ROON-os-missing-codecs#Background>

Because ROON OS (the operating system behind [ROON Optimized Core Kit](#)) is optimized to do nothing but run ROON in the most efficient manner possible, it doesn't contain the general-purpose packages that come along with a large server or desktop Linux OS install.

Refresh the ROON OS Web Interface and it will show that the codecs are no longer missing.

You may also reboot the ROON Server using the ROON OS Web Interface.

<http://192.168.50.97/>

Click on the Power Icon and select **Reboot**.

The screenshot displays the ROON OS Web Interface. At the top left, the ROON logo and 'Roon Optimized Core Kit' are visible. A red arrow labeled 'Reboot' points to a power menu icon in the top right corner, which has a dropdown menu open showing 'Reboot' and 'Power Off' options. Below this, the 'System Status' section shows the serial number #E051D818EC3F. The 'Operating System' section is marked 'OK' with a 'Reinstall' button. The 'Roon Server Software' section is marked 'Missing Codecs' with a '?' button. The 'Roon Database & Settings' section is marked 'OK' with a 'Reset' button. The 'Tailscale' section is marked 'Not signed in' with a 'Sign in' button. At the bottom, a 'Reboot?' dialog box asks for confirmation, with the 'Yes' button highlighted by a red box.

## Success

Device has successfully rebooted.

OK

<http://192.168.50.97/>

roon

Roon Optimized Core Kit



## System Status

Serial #E051D818EC3F

### Operating System

OK

Reinstall

Version 2.1 (build 271) production  
Running 0 minutes, 35 seconds.

### Roon Server Software

OK

Restart

Version 2.48 (build 1517) production  
Running 0 minutes, 29 seconds.

### Roon Database & Settings

OK

Reset

100% of 205 GB available.

### Tailscale

Not signed in

Sign in

Tailscale is an app that creates a private, secure connection between your phone and your Roon Server, making it easier to stay connected even when you're away from home. If you've been having trouble with ARC due to your internet provider or home network, Tailscale could be a great solution. [Learn more](#)

There should be no more warning messages.  
Your ROON Server is up and running.

Remove the HDMI cable connecting the Display Monitor.  
Remove the wired USB keyboard.

You will be administering your ROON Server through a **Web Browser**:  
<http://192.168.50.97/>

You will be copying music files to the microSD Card via **Windows Explorer**:  
<\\192.168.50.97\data>

## Ripping your Music CDs using dBpoweramp Music Converter

The simplest and most efficient way to rip all your music CDs into uncompressed FLAC files is to use the **dBpoweramp Music Converter**.

<https://www.dbpoweramp.com/>

This program automatically generates the metadata and adds the Album Art. You can verify the accuracy of your Rip using AccurateRip.

This supports both Windows and MacOS.

A single license costs \$48.

[https://secure.dbpoweramp.com/store\\_combi.aspx?c=9](https://secure.dbpoweramp.com/store_combi.aspx?c=9)

Here is a walkthrough of the ripping process.

Let's say you want to rip these 6 albums released by Lucy Thomas:



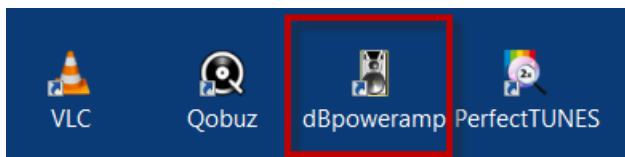
Insert the first album **PREMIERE** into your CD drive.



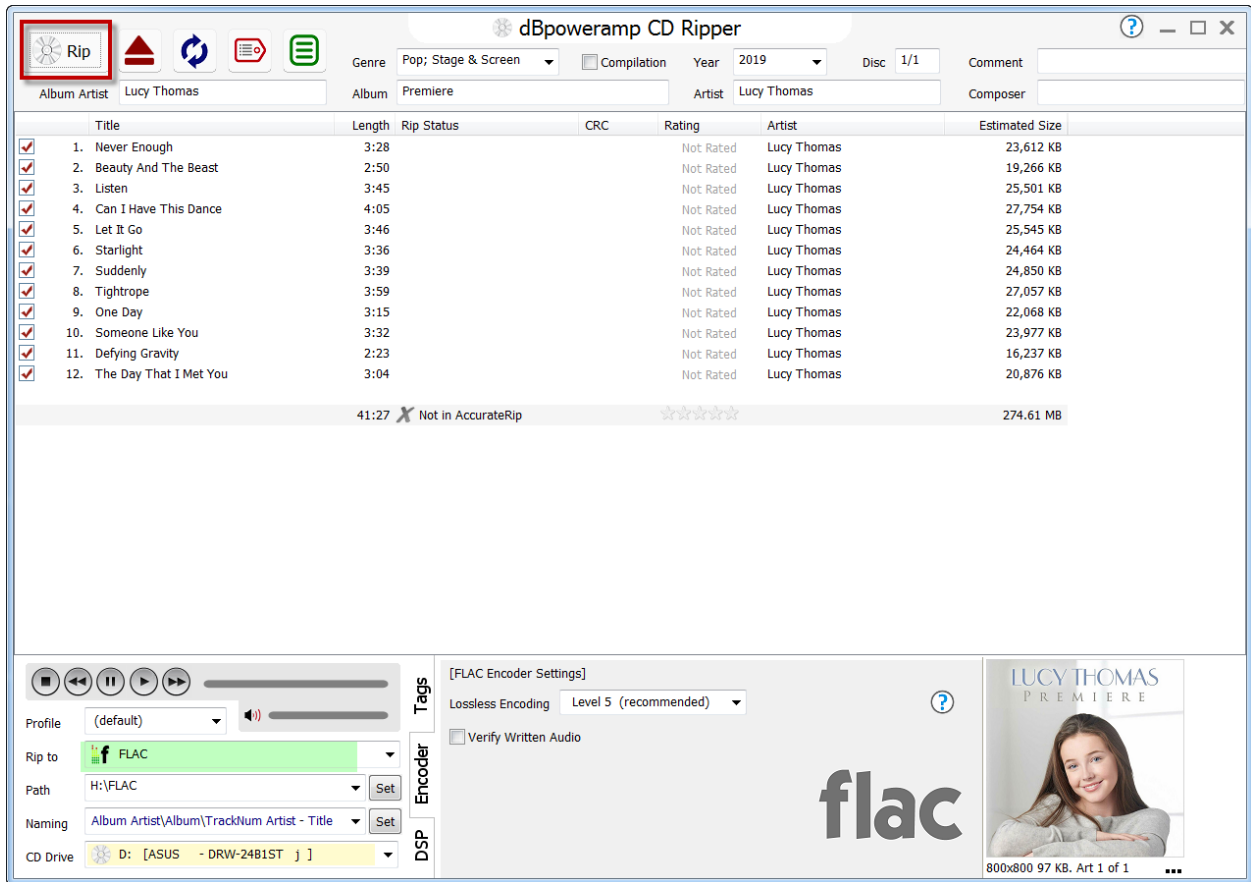
Select **Rip Audio from CD** from the AutoPlay window that pops up.



Or, you could launch dBpoweramp from your desktop:



The dBpowermap CD Ripper Dashboard will open.



Notice how dBpoweramp auto populates the fields without you having to do anything:

Album Artist = Lucy Thomas  
Album= Premiere  
Genre = Pop: Stage & Screen  
Year = 2019  
Disc = 1/1

List of all the tracks in the CD  
Length of each track  
Estimated Size of each track

You need to make a few initial settings for the very first time. These settings will be remembered unless you decide to change them.

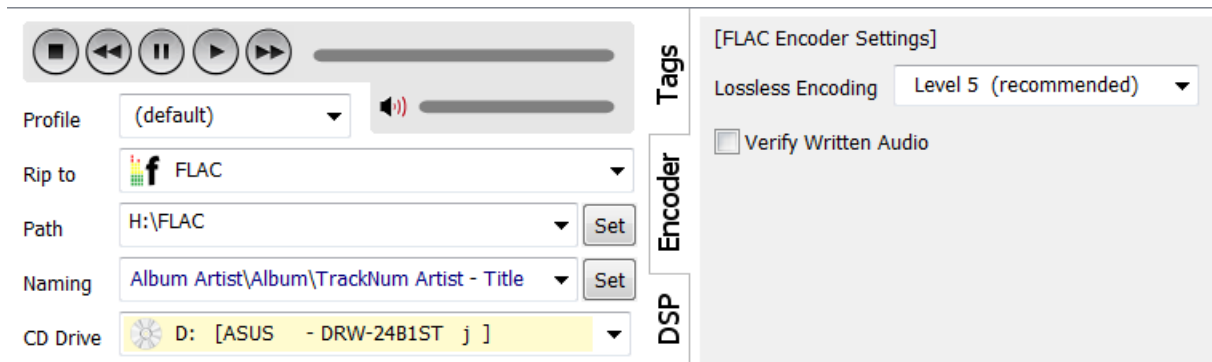
1.  
Rip to **FLAC**

FLAC files takes up less storage space than WAV file while still remaining lossless. This is the preferred format for creating your local Music Library.

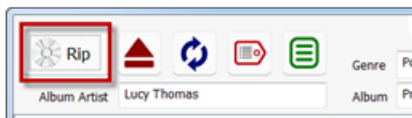
2.  
Set the Path to your Music Library.  
Create a top level folder named **FLAC** in one of your internal drives.

3.  
Set the Naming Convention to **Album Artist\Album\TrackNum Artist - Title**

4.  
Set the Lossless Encoding to **Level 5**



Press the **RIP** button.



The ripping will commence immediately.

	Title	Length	Rip Status	CRC	Rating	Artist	Estimated Size
<input checked="" type="checkbox"/>	1. Never Enough	3:28	CPU1 Encoding 99%		Not Rated	Lucy Thomas	23,612 KB
<input checked="" type="checkbox"/>	2. Beauty And The Beast	2:50	Ripping 0%		Not Rated	Lucy Thomas	19,266 KB
<input checked="" type="checkbox"/>	3. Listen	3:45	Queued		Not Rated	Lucy Thomas	25,501 KB
<input checked="" type="checkbox"/>	4. Can I Have This Dance	4:05	Queued		Not Rated	Lucy Thomas	27,754 KB
<input checked="" type="checkbox"/>	5. Let It Go	3:46	Queued		Not Rated	Lucy Thomas	25,545 KB
<input checked="" type="checkbox"/>	6. Starlight	3:36	Queued		Not Rated	Lucy Thomas	24,464 KB
<input checked="" type="checkbox"/>	7. Suddenly	3:39	Queued		Not Rated	Lucy Thomas	24,850 KB
<input checked="" type="checkbox"/>	8. Tighrope	3:59	Queued		Not Rated	Lucy Thomas	27,057 KB
<input checked="" type="checkbox"/>	9. One Day	3:15	Queued		Not Rated	Lucy Thomas	22,068 KB
<input checked="" type="checkbox"/>	10. Someone Like You	3:32	Queued		Not Rated	Lucy Thomas	23,977 KB
<input checked="" type="checkbox"/>	11. Defying Gravity	2:23	Queued		Not Rated	Lucy Thomas	16,237 KB
<input checked="" type="checkbox"/>	12. The Day That I Met You	3:04	Queued		Not Rated	Lucy Thomas	20,876 KB
							274.61 MB
41:27 Ripped 0 Tracks							☆☆☆☆☆

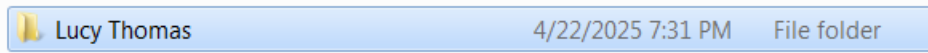
Once the ripping is complete, click on the **Eject** button.

	Title	Length	Rip Status	CRC	Rating	Artist	Estimated Size
<input checked="" type="checkbox"/>	1. Never Enough	3:28	✗ Not in AccurateRip	F943BC79	Not Rated	Lucy Thomas	23,612 KB
<input checked="" type="checkbox"/>	2. Beauty And The Beast	2:50	✗ Not in AccurateRip	2E3E7A52	Not Rated	Lucy Thomas	19,266 KB
<input checked="" type="checkbox"/>	3. Listen	3:45	✗ Not in AccurateRip	B0988F7D	Not Rated	Lucy Thomas	25,501 KB
<input checked="" type="checkbox"/>	4. Can I Have This Dance	4:05	✗ Not in AccurateRip	43B8EA7C	Not Rated	Lucy Thomas	27,754 KB
<input checked="" type="checkbox"/>	5. Let It Go	3:46	✗ Not in AccurateRip	A5D85F40	Not Rated	Lucy Thomas	25,545 KB
<input checked="" type="checkbox"/>	6. Starlight	3:36	✗ Not in AccurateRip	E7E0BD48	Not Rated	Lucy Thomas	24,464 KB
<input checked="" type="checkbox"/>	7. Suddenly	3:39	✗ Not in AccurateRip	0333205A	Not Rated	Lucy Thomas	24,850 KB
<input checked="" type="checkbox"/>	8. Tighrope	3:59	✗ Not in AccurateRip	F2DAA61A	Not Rated	Lucy Thomas	27,057 KB
<input checked="" type="checkbox"/>	9. One Day	3:15	✗ Not in AccurateRip	DB82E5DA	Not Rated	Lucy Thomas	22,068 KB
<input checked="" type="checkbox"/>	10. Someone Like You	3:32	✗ Not in AccurateRip	5A06EBF8	Not Rated	Lucy Thomas	23,977 KB
<input checked="" type="checkbox"/>	11. Defying Gravity	2:23	✗ Not in AccurateRip	DD065FF6	Not Rated	Lucy Thomas	16,237 KB
<input checked="" type="checkbox"/>	12. The Day That I Met You	3:04	✗ Not in AccurateRip	D8C123F8	Not Rated	Lucy Thomas	20,876 KB
							274.61 MB
41:27							☆☆☆☆☆

Open the FLAC folder on your drive:

You will find a new folder has been created with the name of the Artist = **Lucy Thomas**

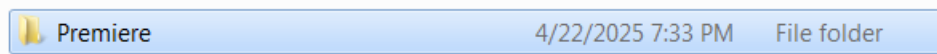
H:\FLAC\



Open the Lucy Thomas folder:

You will find an Album named **Premiere**.

H:\FLAC\Lucy Thomas\



Open the Premiere folder:

You will find the 12 **tracks**.

Each Track Name will contain the Track Number, Artist Name and Song Title.

H:\FLAC\Lucy Thomas\Premiere\

 01 Lucy Thomas - Never Enough.flac	1	Never Enough	Lucy Thomas	Premiere
 02 Lucy Thomas - Beauty And The Beast.flac	2	Beauty And The Beast	Lucy Thomas	Premiere
 03 Lucy Thomas - Listen.flac	3	Listen	Lucy Thomas	Premiere
 04 Lucy Thomas - Can I Have This Dance.flac	4	Can I Have This Dance	Lucy Thomas	Premiere
 05 Lucy Thomas - Let It Go.flac	5	Let It Go	Lucy Thomas	Premiere
 06 Lucy Thomas - Starlight.flac	6	Starlight	Lucy Thomas	Premiere
 07 Lucy Thomas - Suddenly.flac	7	Suddenly	Lucy Thomas	Premiere
 08 Lucy Thomas - Tighrope.flac	8	Tighrope	Lucy Thomas	Premiere
 09 Lucy Thomas - One Day.flac	9	One Day	Lucy Thomas	Premiere
 10 Lucy Thomas - Someone Like You.flac	10	Someone Like You	Lucy Thomas	Premiere
 11 Lucy Thomas - Defying Gravity.flac	11	Defying Gravity	Lucy Thomas	Premiere
 12 Lucy Thomas - The Day That I Met You.flac	12	The Day That I Met You	Lucy Thomas	Premiere
 Folder.jpg				

Folder.jpg contains the Album Art.

Insert the 2<sup>nd</sup> Lucy Thomas Album named **ENCORE** into your CD drive.



Press RIP

**dBpoweramp CD Ripper**

Album Artist: Lucy Thomas | Album: Encore | Artist: Lucy Thomas | Genre: Pop | Year: 2020 | Disc: 1/1

Title	Length	Rip Status	CRC	Rating	Artist	Estimated Size
1. Hero	4:22	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	29,656 KB
2. Run	5:09	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	35,022 KB
3. Desperado	3:17	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	22,331 KB
4. Reflection	3:36	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	24,476 KB
5. Say Something	3:50	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	26,013 KB
6. A Million Dreams	4:28	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	30,397 KB
7. Memory	4:20	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	29,407 KB
8. My Heart Will Go On	4:19	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	29,324 KB
9. Gentle Breeze	2:19	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	15,744 KB
10. I'll Never Love Again	5:28	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	37,153 KB
11. Beautiful Ghosts	4:19	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	29,347 KB
12. I Have Nothing	4:50	<input checked="" type="checkbox"/>		Not Rated	Lucy Thomas	32,792 KB

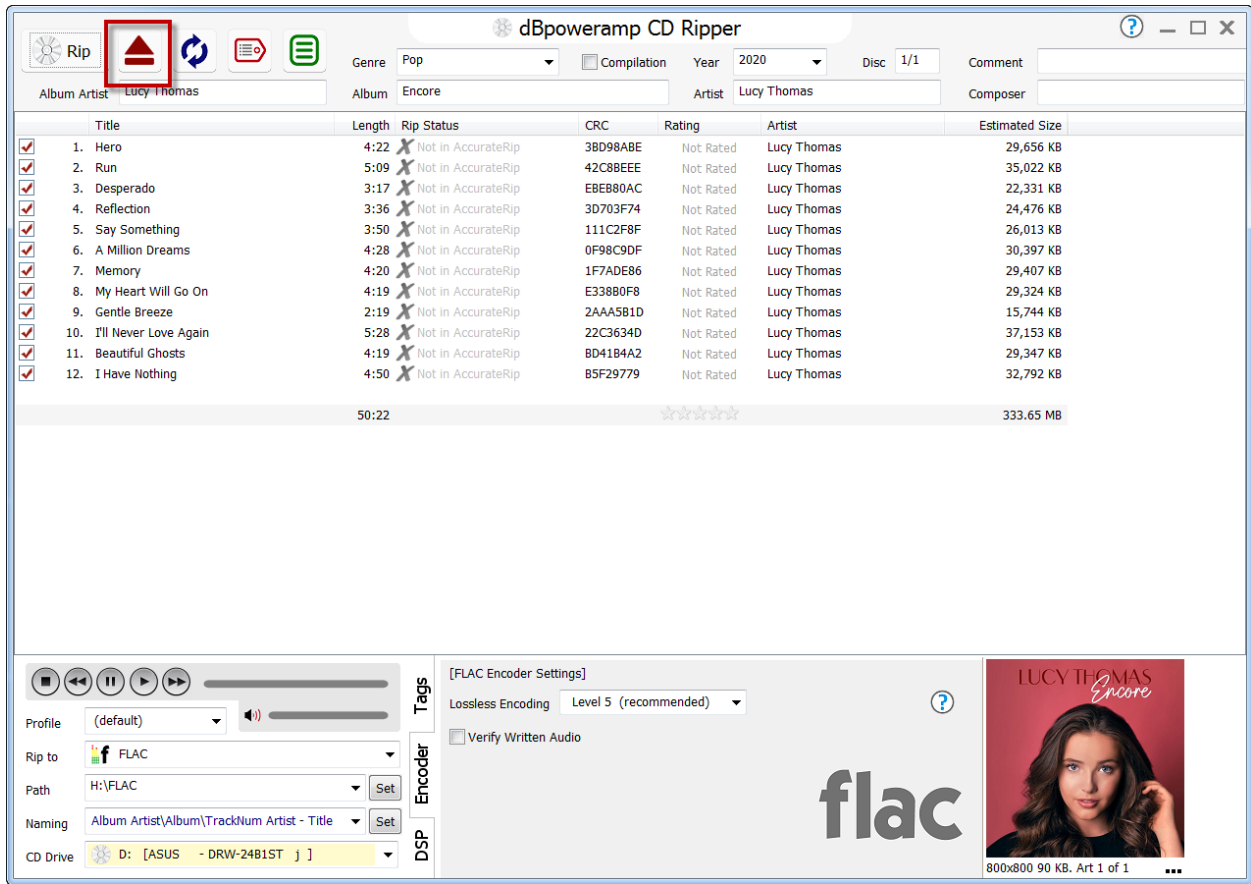
50:22  Not in AccurateRip

Profile: (default) | Rip to: f FLAC | Path: H:\FLAC | Naming: Album Artist\Album\TrackNum Artist - Title | CD Drive: D: [ASUS - DRW-24B1ST j]

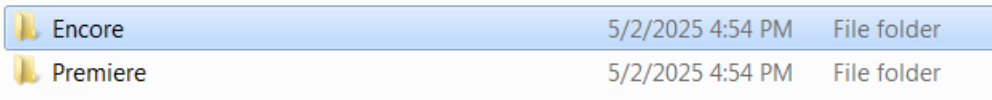
[FLAC Encoder Settings] | Lossless Encoding: Level 5 (recommended) | Verify Written Audio:

**flac**

EJECT when done.



You will find a new folder named Encore under H:\FLAC\Lucy Thomas\



Open the Encore Folder:

H:\FLAC\Lucy Thomas\Encore\

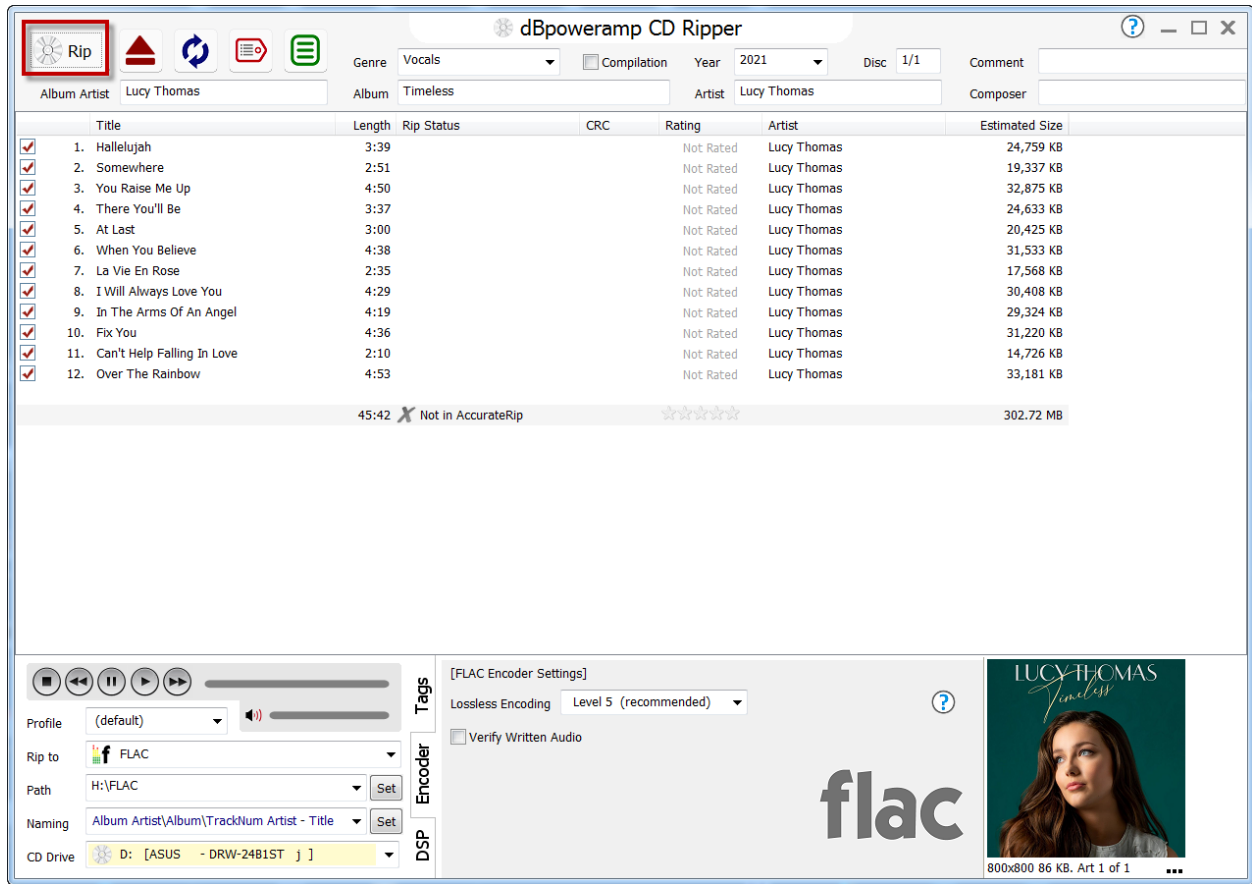
You will find the 12 tracks from this album.

🚧 01 Lucy Thomas - Hero.flac	1	Hero	Lucy Thomas	Encore
🚧 02 Lucy Thomas - Run.flac	2	Run	Lucy Thomas	Encore
🚧 03 Lucy Thomas - Desperado.flac	3	Desperado	Lucy Thomas	Encore
🚧 04 Lucy Thomas - Reflection.flac	4	Reflection	Lucy Thomas	Encore
🚧 05 Lucy Thomas - Say Something.flac	5	Say Something	Lucy Thomas	Encore
🚧 06 Lucy Thomas - A Million Dreams.flac	6	A Million Dreams	Lucy Thomas	Encore
🚧 07 Lucy Thomas - Memory.flac	7	Memory	Lucy Thomas	Encore
🚧 08 Lucy Thomas - My Heart Will Go On.flac	8	My Heart Will Go On	Lucy Thomas	Encore
🚧 09 Lucy Thomas - Gentle Breeze.flac	9	Gentle Breeze	Lucy Thomas	Encore
🚧 10 Lucy Thomas - I'll Never Love Again.flac	10	I'll Never Love Again	Lucy Thomas	Encore
🚧 11 Lucy Thomas - Beautiful Ghosts.flac	11	Beautiful Ghosts	Lucy Thomas	Encore
🚧 12 Lucy Thomas - I Have Nothing.flac	12	I Have Nothing	Lucy Thomas	Encore
📁 Folder.jpg				

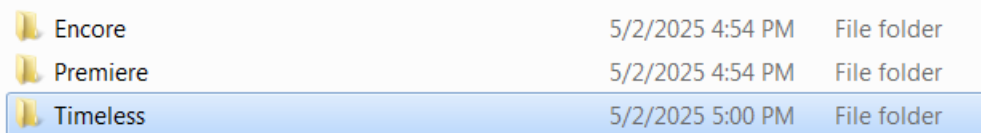
Eject this disc and insert the 3<sup>rd</sup> album = **TIMELESS**



RIP

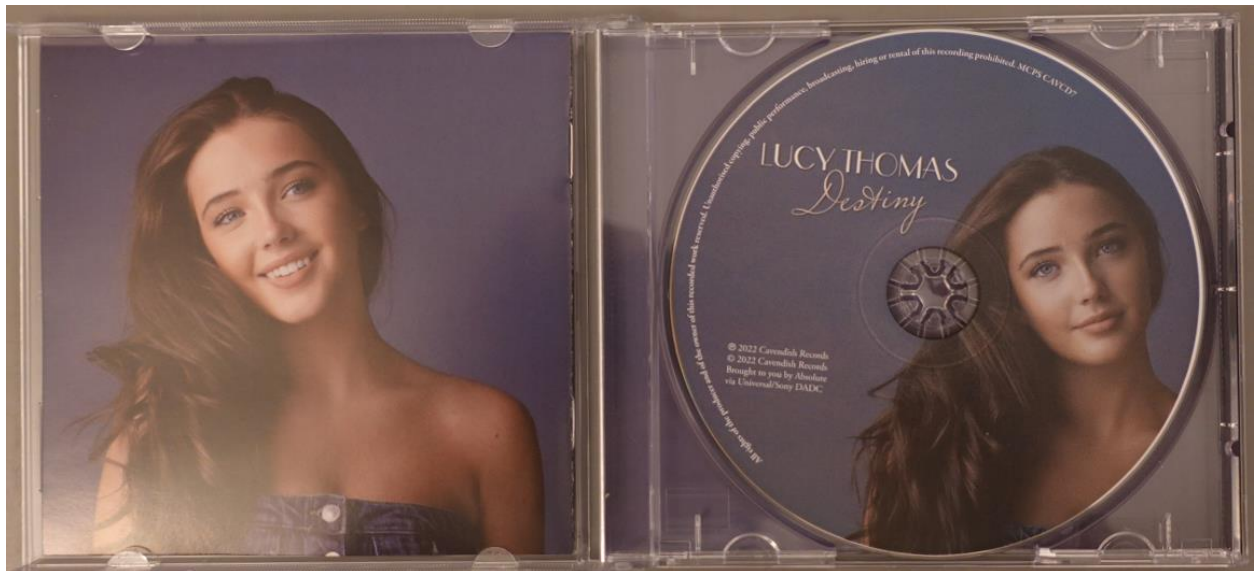


You will find the 3<sup>rd</sup> album Timeless under H:\FLAC\Lucy Thomas\



Now you have a clear understanding of how dbPoweramp is building up your local Music Library.

Insert the 4<sup>th</sup> album = DESTINY



You would notice a new message stating “CD in AccurateRip”

This is a good sign. This means you will have a quick way of verifying the quality of your RIP against others who have done this.

dBpoweramp CD Ripper

Genre: Vocals | Compilation:

Album Artist: Lucy Thomas | Album: Destiny

	Title	Length	Rip Status	CRC	Rating
<input checked="" type="checkbox"/>	1. Always Remember Us This Way	3:27			No
<input checked="" type="checkbox"/>	2. Run To You	4:27			No
<input checked="" type="checkbox"/>	3. Wind Beneath My Wings	4:53			No
<input checked="" type="checkbox"/>	4. Broken Dreams	3:57			No
<input checked="" type="checkbox"/>	5. The Prayer	4:58			No
<input checked="" type="checkbox"/>	6. I Don't Want to Miss a Thing	4:27			No
<input checked="" type="checkbox"/>	7. Footprint In The Sand	3:58			No
<input checked="" type="checkbox"/>	8. Make You Feel My Love	3:32			No
<input checked="" type="checkbox"/>	9. The Climb	3:56			No
<input checked="" type="checkbox"/>	10. All By Myself	4:53			No
<input checked="" type="checkbox"/>	11. Someone Your Loved	3:04			No
<input checked="" type="checkbox"/>	12. Moon River	1:48			No

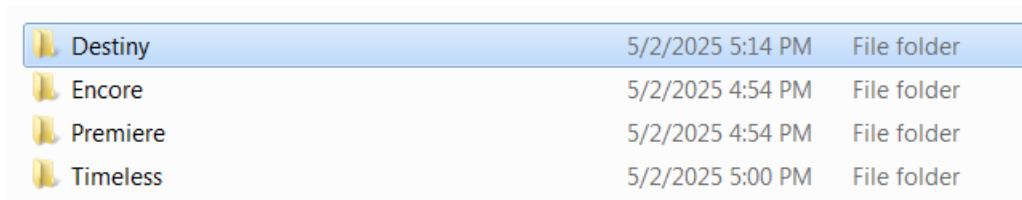
47:26 CD in AccurateRip ☆☆☆

RIP this Album.

All 12 tracks have been ripped perfectly bit for bit. They match the CRC values.



You will find a new folder named Destiny under H:\FLAC\Lucy Thomas\



Rip the 5<sup>th</sup> Album = BEYOND



Rip selected tracks (ALT+R)

dBpoweramp C

Genre: Vocals  Compilation

Album Artist: Lucy Thomas Album: Beyond

	Title	Length	Rip Status	CRC
<input checked="" type="checkbox"/>	1. Evergreen	3:06	Accurate (1)	4E5659E2
<input checked="" type="checkbox"/>	2. A Whiter Shade Of Pale	4:50	Accurate (1)	E07FF5F1
<input checked="" type="checkbox"/>	3. The Greatest Love Of All	3:04	Accurate (1)	6DE63ACC
<input checked="" type="checkbox"/>	4. What A Wonderful World	2:41	Accurate (1)	AD8C1121
<input checked="" type="checkbox"/>	5. Hold On	3:44	Accurate (1)	423B1383
<input checked="" type="checkbox"/>	6. Brand New Day	3:58	Accurate (1)	DD10C2E5
<input checked="" type="checkbox"/>	7. Pie Jesu	3:27	Accurate (1)	EA845D15
<input checked="" type="checkbox"/>	8. Bridge Over Troubled Water	4:52	Accurate (1)	354FEDEC
<input checked="" type="checkbox"/>	9. Above The Clouds	3:24	Accurate (1)	A8A0E09F
<input checked="" type="checkbox"/>	10. Smile	2:23	Accurate (1)	FFD0D4C3
<input checked="" type="checkbox"/>	11. The Way We Were	3:30	Accurate (1)	8D400DC7
<input checked="" type="checkbox"/>	12. A Thousand Years	4:43	Accurate (1)	B8CFE041
		43:49	12 Accurate	

Rip the 6<sup>th</sup> Album = ROSIE



Edit the Album Artist field to read **Lucy Thomas**

This will ensure that this album gets listed within the Lucy Thomas folder.

**dBpoweramp CD Ripper**

Genre: Pop |  Compilation | Year: 2024 | Disc: 1/1 | Comment: [ ]

Album Artist: Lucy Thomas | Album: Rosie The Musical: Original Studio Cast Record | Artist: <Various Artists> | Composer: [ ]

Title	Length	Rip Status	CRC	Rating	Artist	Estimated Size
<input checked="" type="checkbox"/> 1. One Day	2:15			Not Rated	Lucy Thomas	15,366 KB
<input checked="" type="checkbox"/> 2. Dear Lord We Thank You For This Day	2:57			Not Rated	Lucy Thomas & St. Bede's Ca...	20,006 KB
<input checked="" type="checkbox"/> 3. Suddenly	3:40			Not Rated	Lucy Thomas	24,933 KB
<input checked="" type="checkbox"/> 4. Starlight	3:38			Not Rated	Lucy Thomas	24,649 KB
<input checked="" type="checkbox"/> 5. Gentle Breeze	2:21			Not Rated	Lucy Thomas	15,970 KB
<input checked="" type="checkbox"/> 6. Romano's	2:29			Not Rated	Kantos Chamber Choir	16,906 KB
<input checked="" type="checkbox"/> 7. I Still Believe In Love	3:53			Not Rated	Desmonda Cathabel	26,351 KB
<input checked="" type="checkbox"/> 8. Above The Clouds	3:27			Not Rated	Lucy Thomas & Will Callan	23,448 KB
<input checked="" type="checkbox"/> 9. Our Homeland	3:09			Not Rated	Kantos Chamber Choir	21,369 KB
<input checked="" type="checkbox"/> 10. Broken Dreams	3:56			Not Rated	Lucy Thomas	26,714 KB
<input checked="" type="checkbox"/> 11. Hold On	3:46			Not Rated	Lucy Thomas & Will Callan	25,578 KB
<input checked="" type="checkbox"/> 12. We Can Change The World	3:43			Not Rated	Lucy Thomas & Kantos Cham...	25,312 KB

39:18  Not in AccurateRip ☆☆☆☆☆ 260.35 MB







Profile: (default) | Rip to: f FLAC | Path: H:\FLAC | Naming: Album Artist\Album\TrackNum Artist - Title | CD Drive: D: [ASUS - DRW-24B1ST j ]

[FLAC Encoder Settings] | Lossless Encoding: Level 5 (recommended) |  Verify Written Audio

**flac** | 800x800 65 KB. Art 1 of 1

Here is how the 6 albums would appear in your local Music Library.

H:\FLAC\Lucy Thomas\



 Beyond	4/22/2025 7:55 PM	File folder
 Destiny	4/22/2025 7:50 PM	File folder
 Encore	4/22/2025 7:40 PM	File folder
 Premiere	4/22/2025 7:33 PM	File folder
 Rosie The Musical	4/29/2025 1:51 PM	File folder
 Timeless	4/22/2025 7:45 PM	File folder

Next, gather all your music CDs from a different artist say **Celine Dion**.

Rip them one by one.








This is how they would be organized.

H:\FLAC\

 Celine Dion	5/2/2025 5:31 PM	File folder
 Lucy Thomas	5/2/2025 5:31 PM	File folder

Within the **Celine Dion** folder you will find all her Albums in your collection.

H:\FLAC\Celine Dion

 A New Day Has Come	9/22/2020 3:06 PM	File folder
 Celine Dion	7/20/2020 11:59 AM	File folder
 Falling into You	7/20/2020 11:53 AM	File folder
 Let's Talk About Love	7/20/2020 11:49 AM	File folder
 One Heart	9/22/2020 3:09 PM	File folder
 The Colour of My Love	7/20/2020 11:56 AM	File folder
 Unison	7/20/2020 12:02 PM	File folder

If an album spans over multiple discs, the disc numbers are tagged at the end of the Album Name like so:

H:\FLAC\ABBA



Arrival	7/21/2020 8:02 PM	File folder
Super Trouper	7/21/2020 7:56 PM	File folder
Thank You for the Music, Disc 1	7/21/2020 8:16 PM	File folder
Thank You for the Music, Disc 2	7/21/2020 8:13 PM	File folder
Thank You for the Music, Disc 3	7/21/2020 8:09 PM	File folder
Thank You for the Music, Disc 4	7/21/2020 8:06 PM	File folder
Visitors	7/21/2020 7:53 PM	File folder
Voulez-Vous	7/21/2020 7:59 PM	File folder
Voyage	11/6/2021 3:27 PM	File folder

ROON readily recognizes this file structure generated by dBpoweramp. This makes dBpowermap the ideal companion program to build up your local Music Library.

Imagine the time it saves you by not having to manually enter all the metadata for each track.

## Tips from David Snyder on Building your Local Music Library

### CD Ripping with dBpoweramp

Setup Guide:

<https://www.dbpoweramp.com/cd-ripper-setup-guide.htm>

### DVD Audio / Blu-Ray Pure Audio ripping with DVD Audio Extractor

Reference:

<https://www.dvdae.com/>

### Ripping the SACD layer from SACDs with an old Sony Blu-ray player

Reference:

<https://gist.github.com/willsthompson/a4ececdee9cbc4e369eb923e136a8243>

Compatible players:

<https://tinyurl.com/Sony-SACD-Players>

### Metadata management for local music files

SongKong:

<https://jthink.net/songkong/>

PerfectTUNES:

<https://www.dbpoweramp.com/perfecttunes.htm>

## Copying your Music Library to the SanDisk 512GB microSD card

The SanDisk 512GB microSD card comes formatted as **exFAT**.  
ROON can read this format. You may use this card right away.



On average, it takes up 400MB of disk space to rip each CD into FLAC files.  
This means your 512GB microSD card can hold up to 1280 ripped CDs.

The GMKtec N97 mini PC supports microSDXC cards that have a capacity limit of 2TB. They can hold 5,120 ripped CDs in FLAC format.

What should you do if you have a larger CD collection?

The solution is to use one or more of the three USB 3.2 ports on the device and plug in a larger capacity USB drive.

You can use the **Samsung T7** USB 3.2 portable SSD that comes with storage capacity up to **4TB**.

<https://www.amazon.com/SAMSUNG-Portable-SSD-2TB-MU-PC2T0T/dp/B0874XWW23>



It is possible to split your Music Library across different locations. You can add multiple paths for ROON to read your Music Library.

Insert the SanDisk microSD card into the SD card adapter.



Insert the microSD adapter into a USB 3.0 SDXC Card Reader.



The microSD Card will show up as a new drive in Windows Explorer. Create a top level folder named **MusicLibrary** on the microSD card.

Copy the entire FLAC folder that holds your local Music Library under this MusicLibrary folder on your microSD card.

Your microSD Card should show a folder structure like this:

M:\MusicLibrary\FLAC\

 Celine Dion	5/2/2025 6:53 PM	File folder
 Lucy Thomas	5/2/2025 6:54 PM	File folder

Remove the microSD card from the adapter and insert it into the microSD card slot on the GMKtec device with the label facing down.

You would need to use a pin to push the microSD card into the slot till it securely clicks in.

You should never have to remove this card again. Adding additional FLAC files to this microSD card will be done through the Windows Explorer.

If you ever need to remove the microSD card, shut down the mini PC first. You can do this from the web UI or by short pressing the power button.

## Installing the ROON Remote App

The [ROON Remote App](#) can be installed on an iOS or Android Tablet or Phone.

You may also install this on a Mac or Windows PC running Windows 10 or higher.

You can install the free ROON Remote App on multiple devices and use them simultaneously.

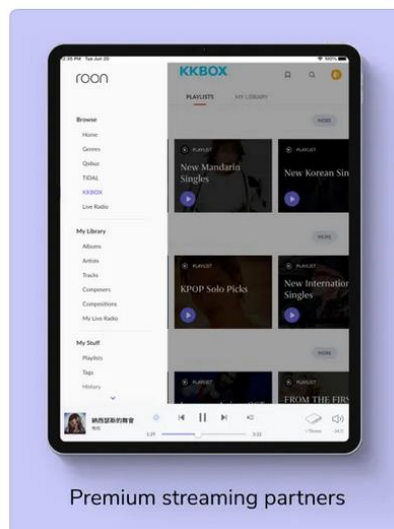
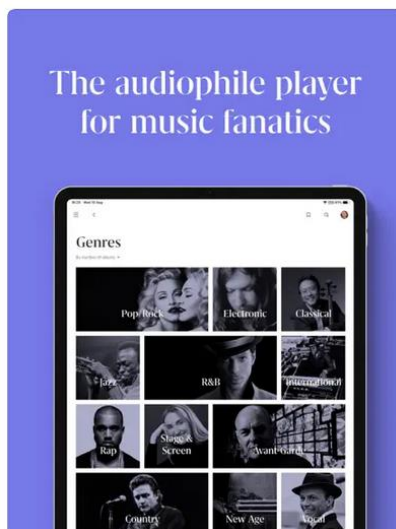
This is the ROON App for the iPad. Install this from the Apple App Store.

<https://apps.apple.com/us/app/ROON/id1014764083?platform=ipad>

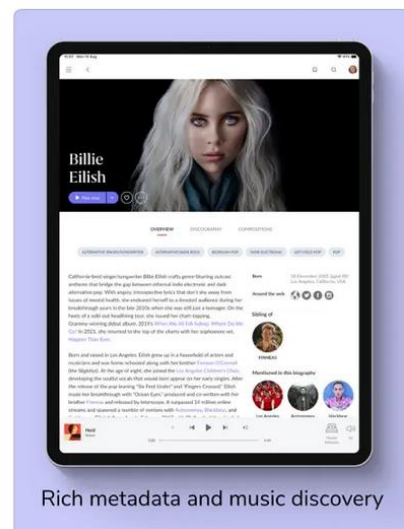


**Roön** 4+  
The ultimate music player  
**Roön Labs**  
★★★★☆ 3.6 - 505 Ratings  
Free

### Screenshots [iPhone](#) [iPad](#)

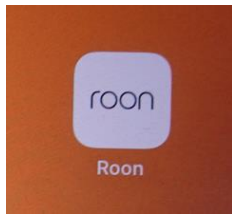


Premium streaming partners



Rich metadata and music discovery

Launch the ROON Remote App on your iPad.



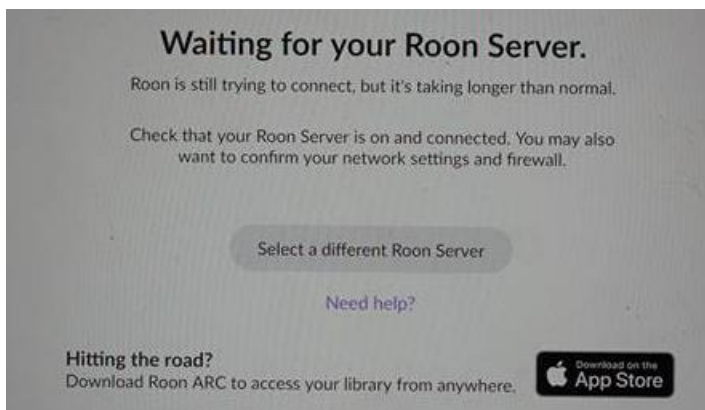
Press the **Connect** button to connect to your ROON Server.



Press the **Update now** button to update the ROON OS

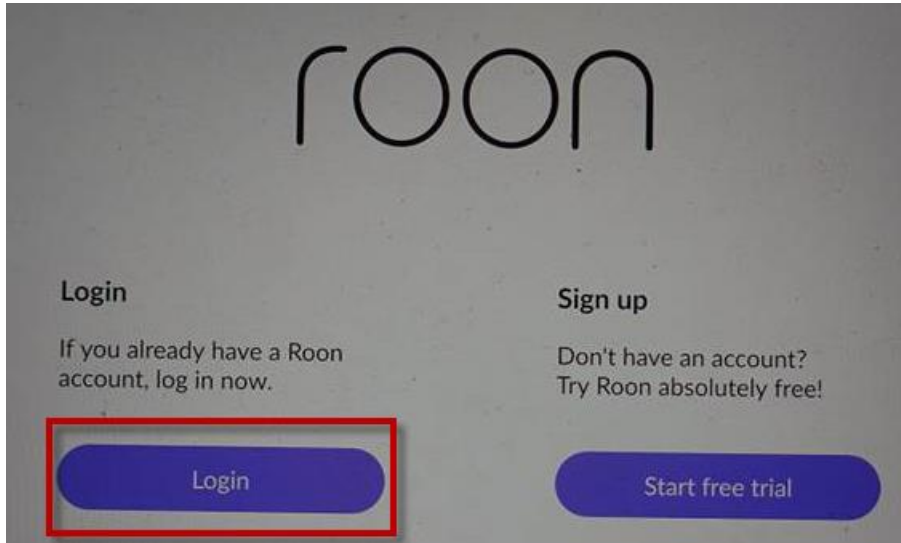


At this step you may get this screen saying "Waiting for your ROON Server."

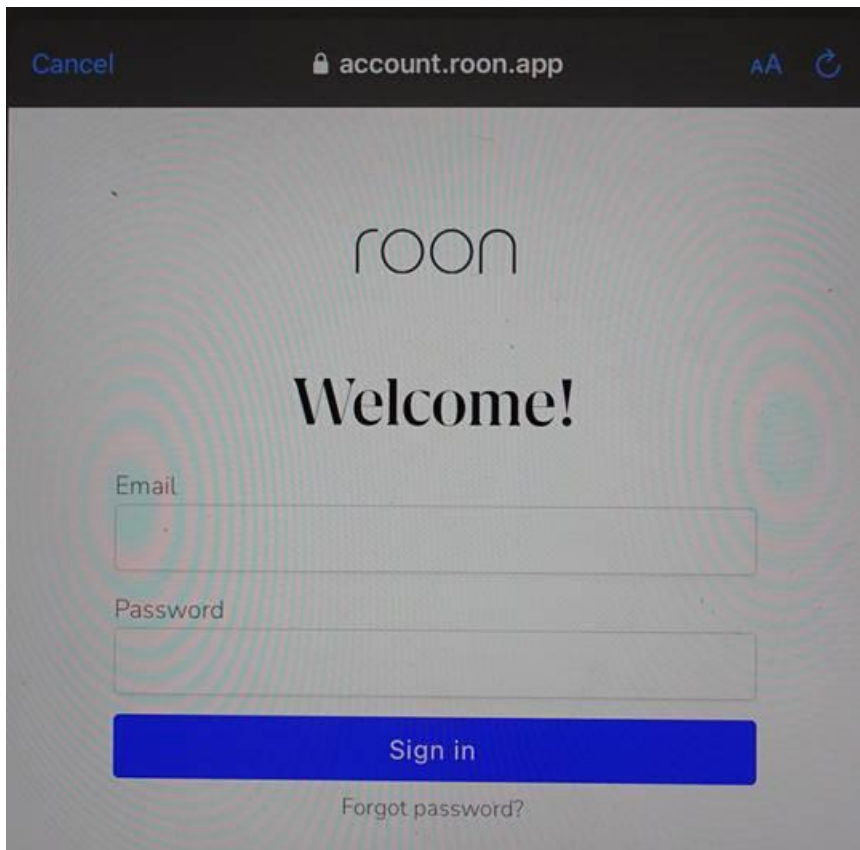


**Reboot** your ROON Server. This will resolve the problem.

The ROON Remote App will connect to your ROON Server and you will get this login screen.

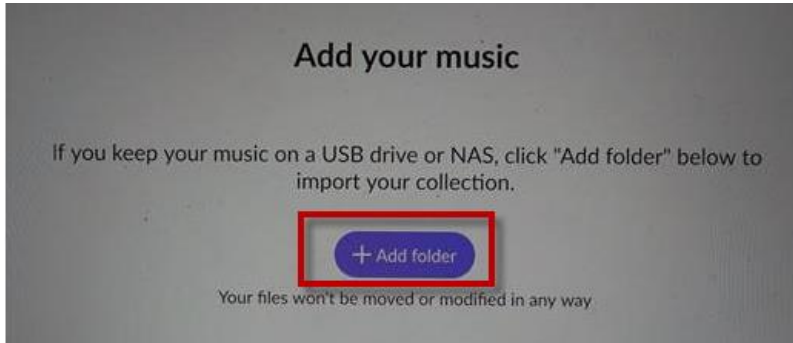


Login with the ROON Account you have created previously. If you have not, you can start a free 14-day trial.

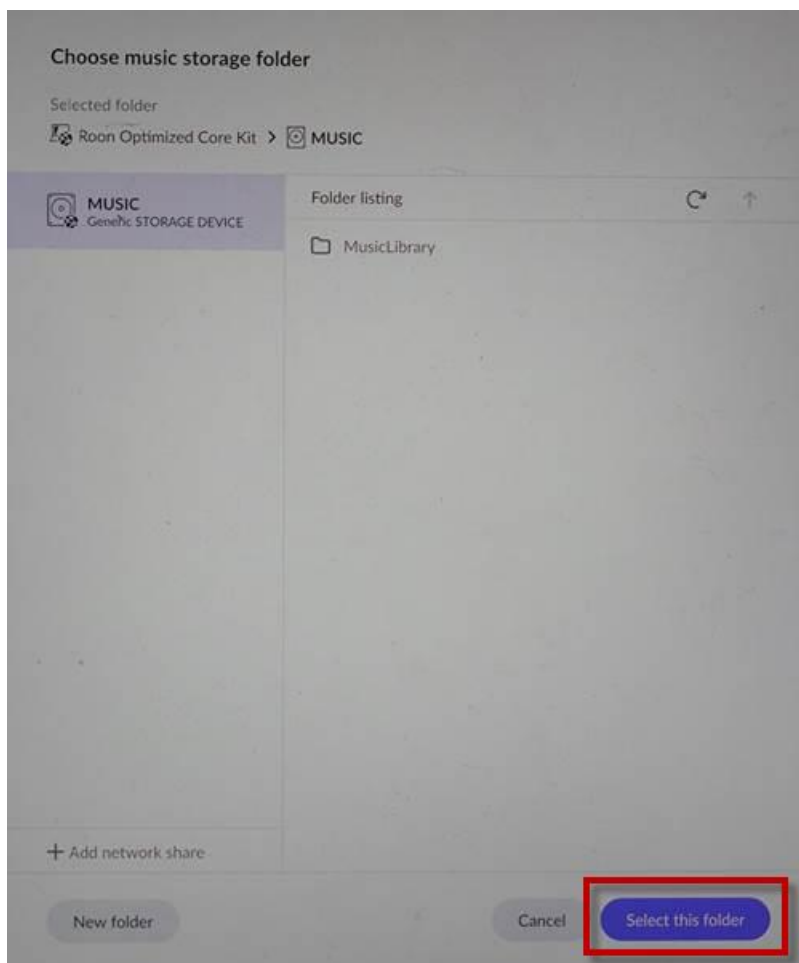


ROON will ask you to add your local Music Library.

Press the **Add Folder** button.

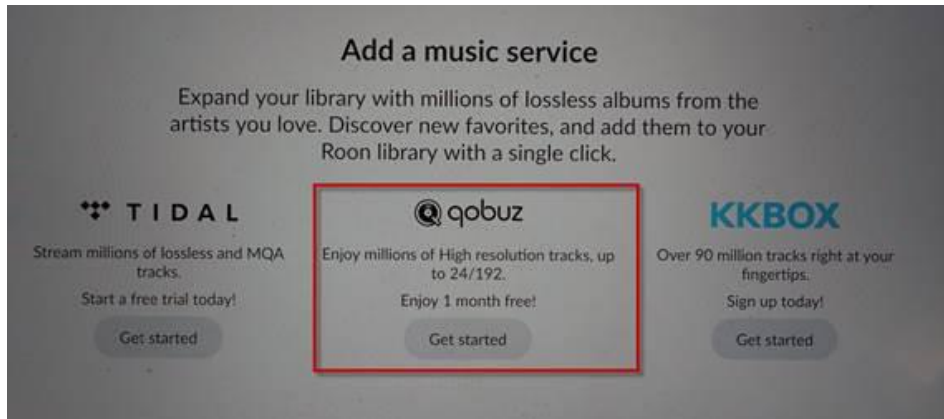


The ROON OS would discover the SanDisk 512 GB microSD card on your mini PC as a Generic STORAGE DEVICE. It would list the top level folder named **MusicLibrary**.



Press the **Select this folder** button.

ROON would ask you to **Add a Music Service**.



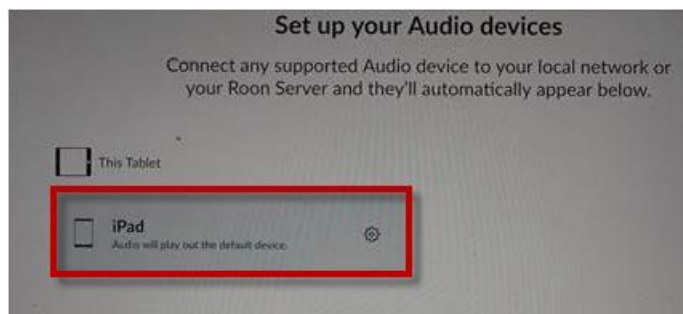
Select **Qobuz**.

Login with your Qobuz Account

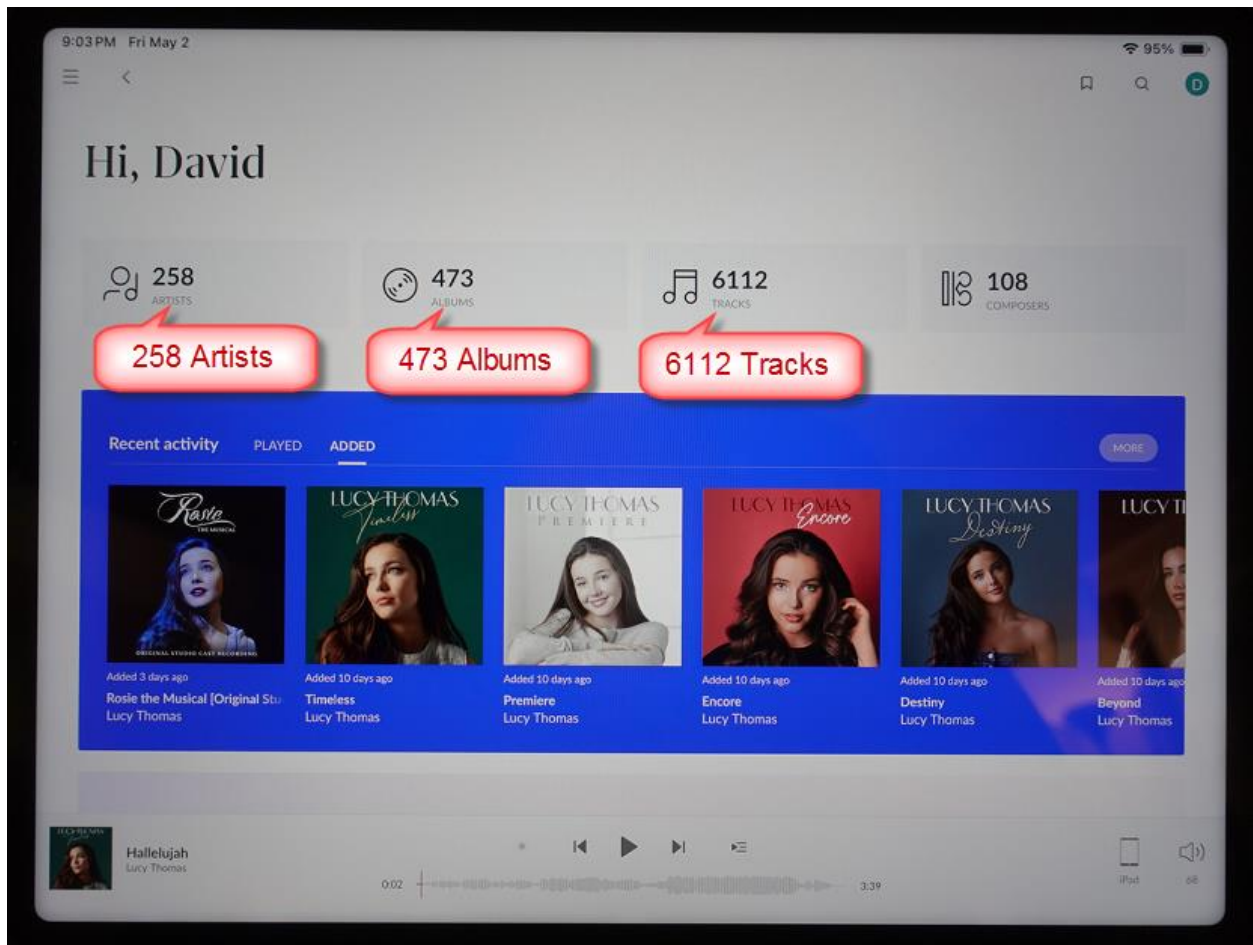


If you do not have a Qobuz Account, you may start a free trial.

ROON will try to connect all supported Audio Devices in your local network. Your iPad is already connected.



You will see the ROON Home Screen on your iPad.



My Local Music Library on the SanDisk 512 GB microSD Card contains:

- 258 Artists
- 473 Albums
- 6112 Tracks

Click on any Album in your local library, select any track and press the **PLAY** button below.

You may need to adjust the Volume.



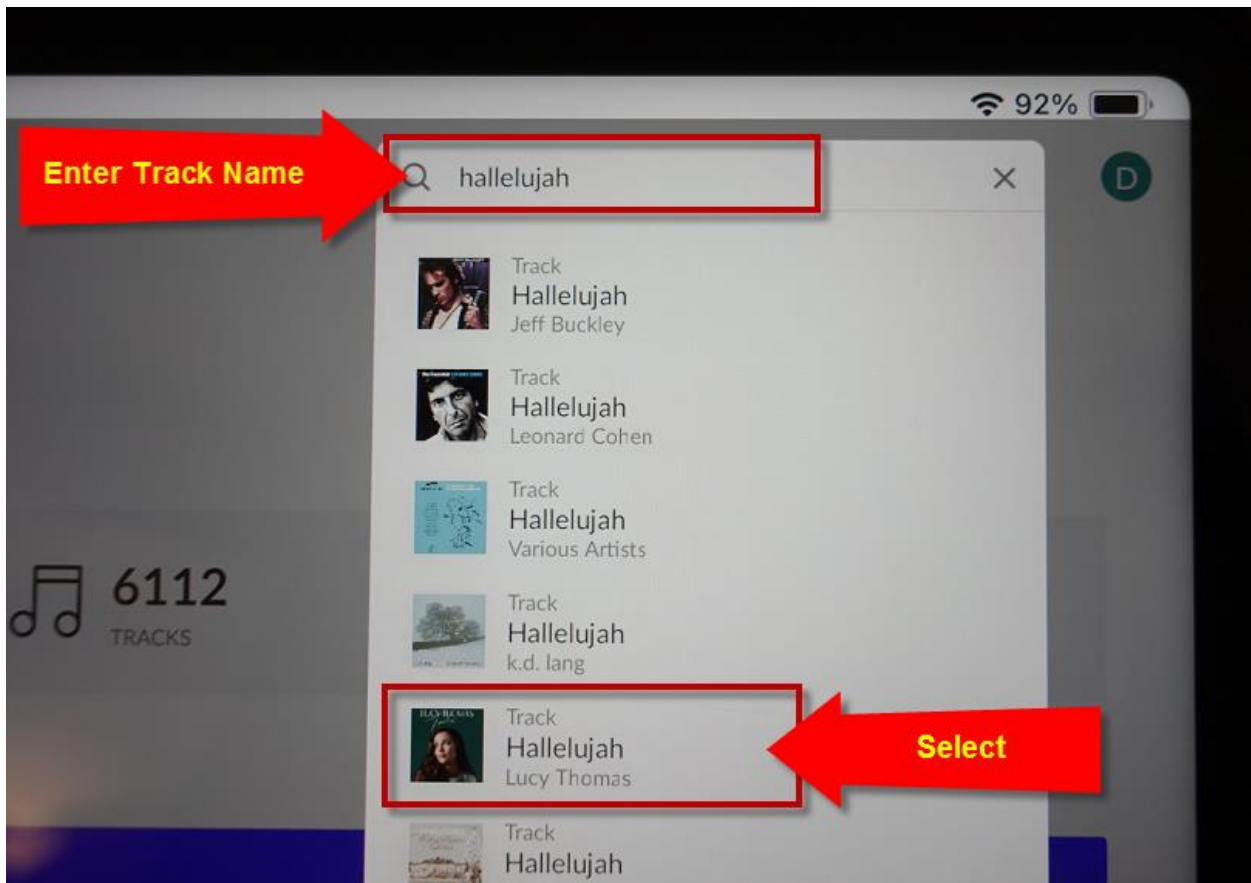
You should hear the music being played through your iPad speakers. This verifies your setup.

Here is a quick way to search for any Artist or Song.

Tap the **Global Search** Icon on the top right of the ROON Home Screen.

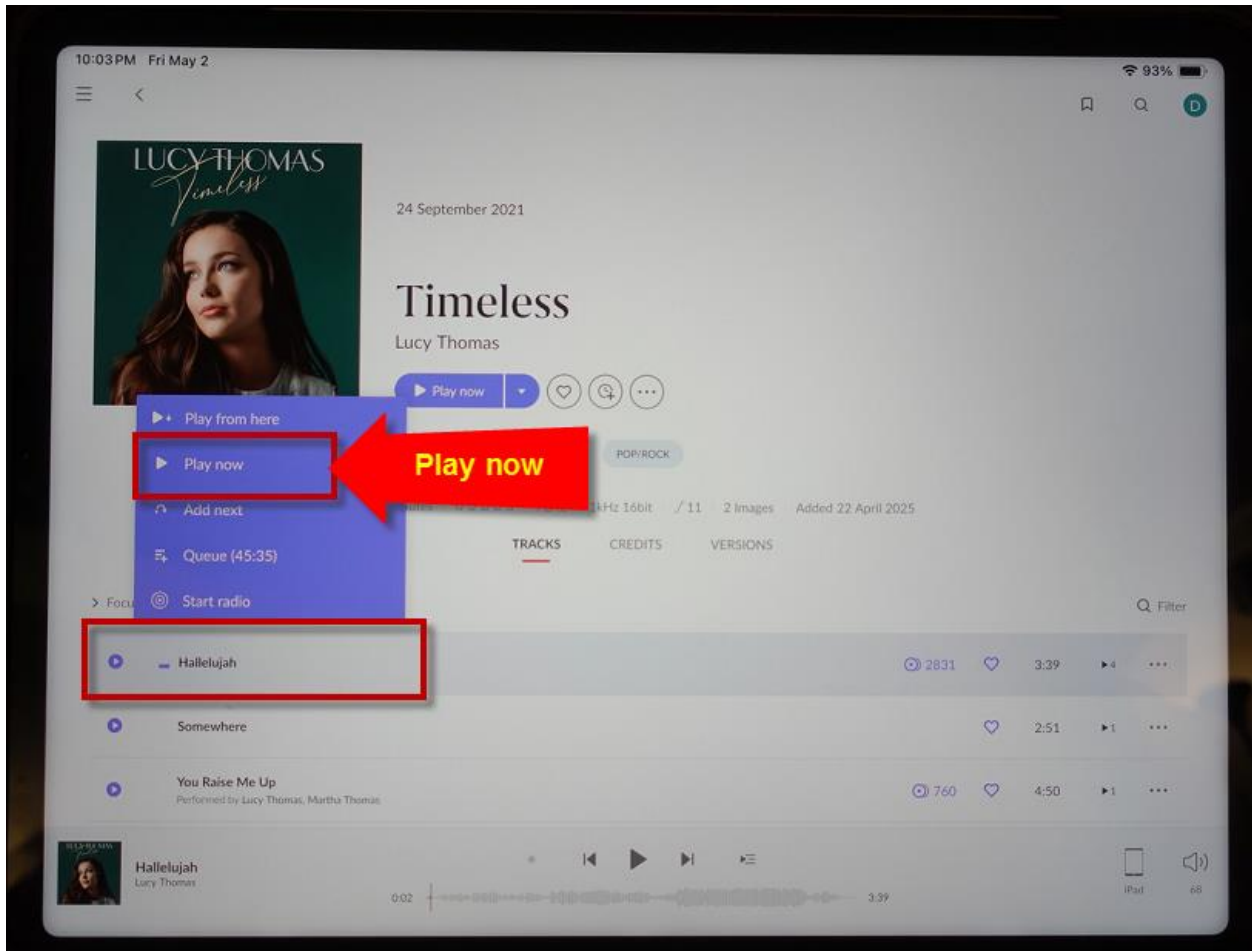


Enter Track Name = **Hallelujah** in the search box.  
ROON will display a list of choices



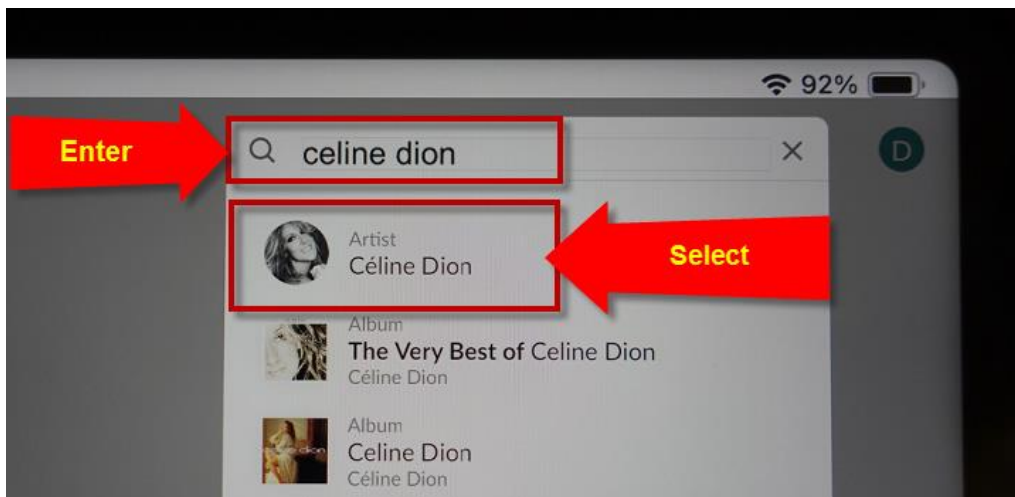
Select **Hallelujah** by Lucy Thomas.

Tap on the Track and select **Play now**.



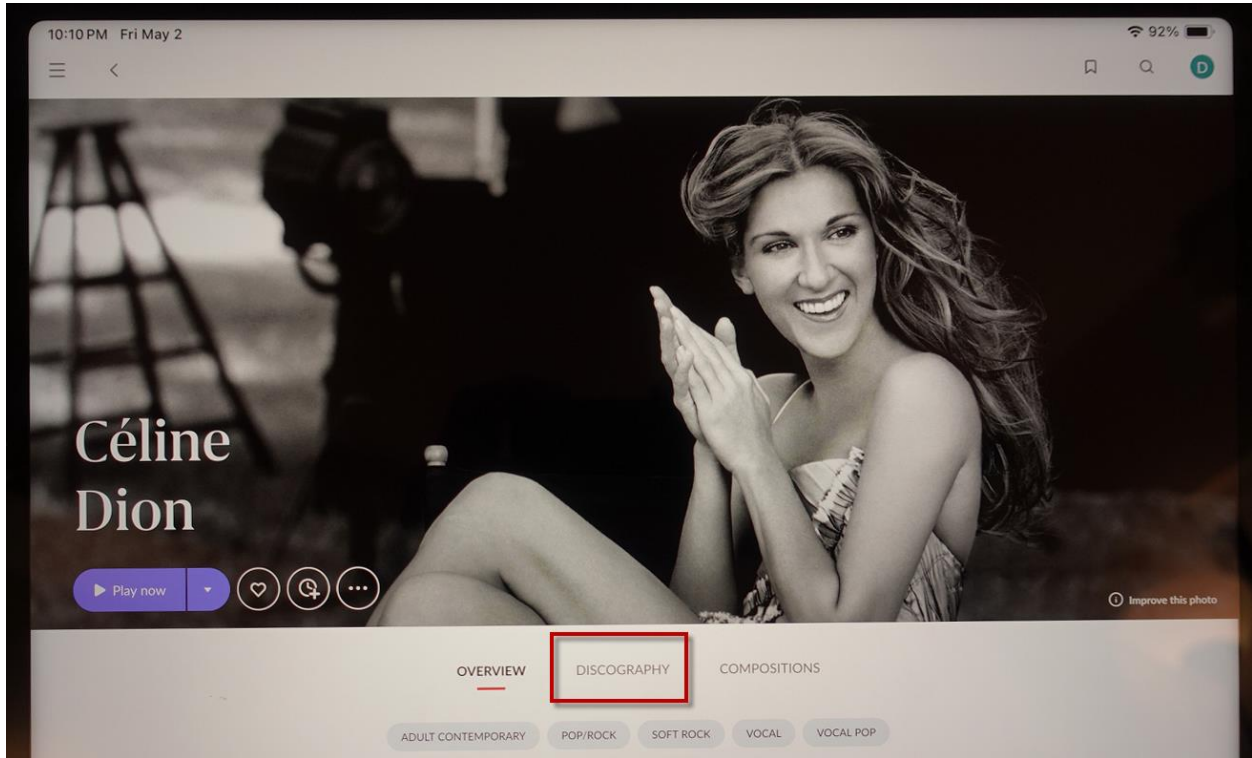
You may also search by Artist Name.

Enter Artist Name = **Celine Dion** in the search box.

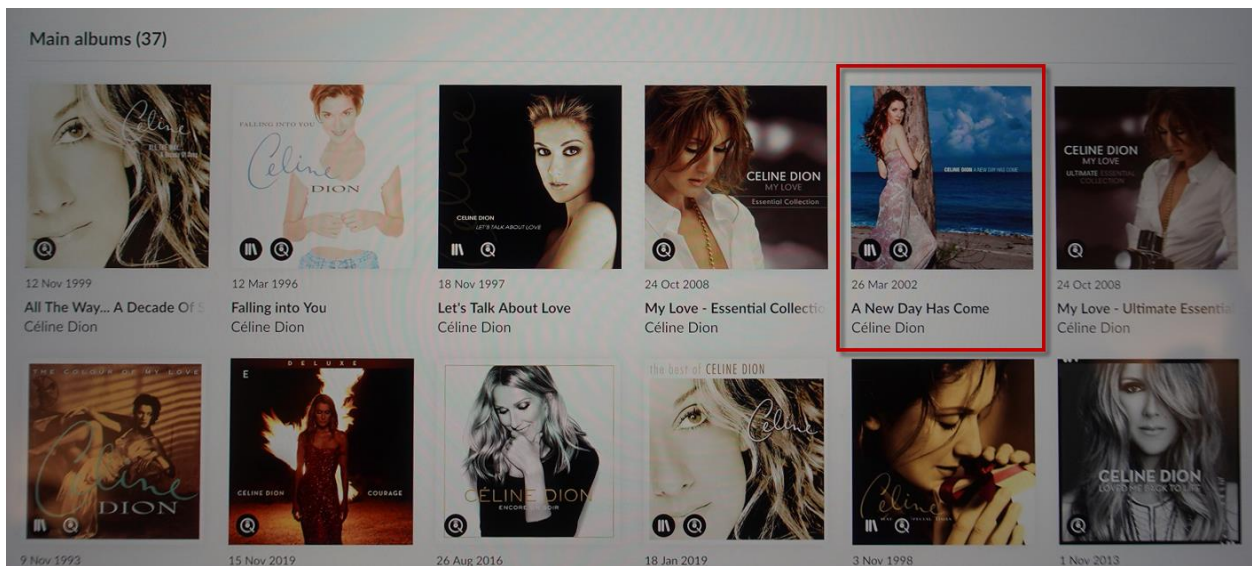


ROON will open the landing page for Celine Dion.

Tap on the **DISCOGRAPHY** Tab

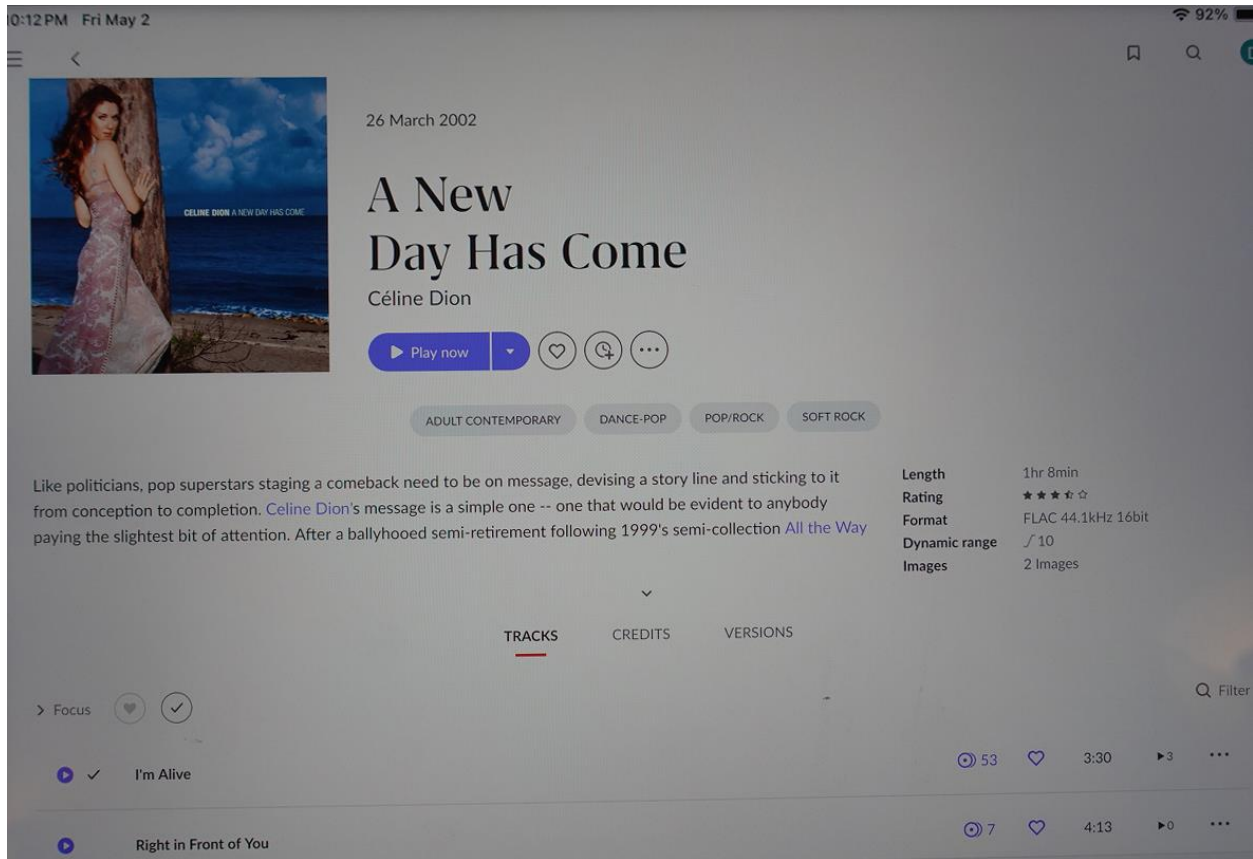


You will find a list of her Albums.



Select Album = **A New Day Has Come**

Play any track



Before you take a deep dive into the ROON User Interface it would be a good idea to set up your Music Streamer so that you can enjoy high quality playback through your DAC.

## Connecting your FiiO SR11 Music Streamer to your LAN



The FiiO SR11 Music Streamer is a ROON READY device. You can control the output Volume of the SR11 remotely via the ROON Remote App.

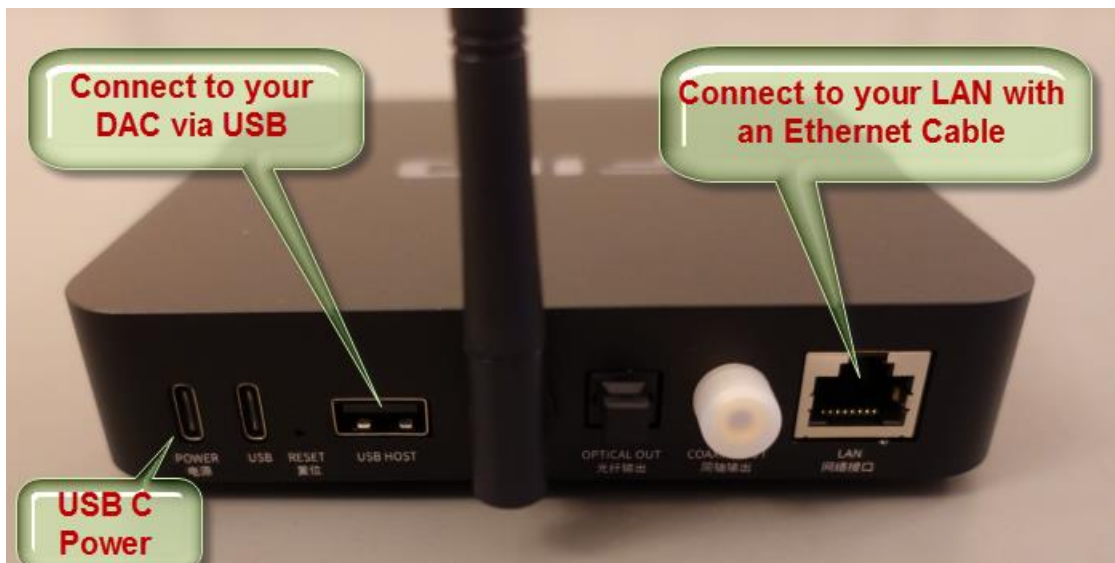
This is the FiiO SR11 Remote.



You need to make just 3 connections.

1. Use a USB Cable to connect the USB Output of the SR11 to the USB Input of your DAC. You may also use the S/PDIF Coaxial or Toslink Outputs. However, the USB Connection generally works best.

The SR11 can output to USB or S/PDIF, but not simultaneously.



2. Connect the SR11 to your LAN using an Ethernet CAT5e cable.
3. Connect the USB-C power cable and plug in the adapter.

4. Press the Power Button on the SR11 Remote.



The front LED display will show the Sample Rate and Volume Level.



You can adjust the output volume by turning the Volume Knob on the device or pressing the Volume Up/Down buttons on the SR11 remote.

A different set of Menu Options show up depending on whether to *Long Press* or *Short Press* this Volume Knob.

Here is a quick walk through of the SR11 Settings.

### Short Press on the Volume Knob:

It cycles through 3 Working Modes:

- ROON
- AIRPLAY
- MIX



MIX Mode supports both ROON and AIRPLAY.  
Keep it at MIX Mode.

### Long Press on the Volume Knob:

This gives you access to these configurable parameters in the SETTINGS MENU.

1.

Digital Out = SPD or USB

Note: **Short Press** to change this setting.



If you are using a USB connection to your DAC, select **OUT USB**

2.

DSD Output = DOP or D2P

**DOP** = DSD over PCM. Use only when your DAC can handle DSD.

**D2P** = DSD converted to PCM by the SR11 device



3.

Volume Level = Adjustable or MAX

**Note:** If your DAC has a volume control, use it and leave the SR11 Volume to MAX.



4.

LCD Timeout = Adjustable (1, 2, 5, 10, 30) minutes. 0 = Always On.



5.

LCD Brightness = Adjustable (1-3 Levels).



6.

RGB Brightness = Adjustable Levels (1, 2, 3, 4, 5). 0 = OFF



**Note:** Set this to OFF. The RGB lights on the top of the device can be distracting.

7.  
Network Settings



8.  
Firmware Version  
M239 is the latest firmware as of 4/8/2025.



9.  
Update Firmware Page



10.  
IP Settings



11.  
Return to Home Page



## Operation Explained

### 1. Power on/off

Plug in a 5V power supply through the USB port, and short press the power button to turn on the device. When the device is on, hold the power button to turn it off.

### 2. Knob operation

#### 1) Switch working mode

Turn on the device. On the homepage, short press the knob to enter the working mode menu. Rotate the knob to successively switch between DLNA, Roon and AirPlay. After selecting the desired mode, short press the knob to complete the switch and return to the homepage.

If no mode is selected, hold the knob for about 2s to return to the homepage.

#### 2) Settings menu

Turn on the device. On the homepage, hold the knob for about 2s to enter the Settings menu. Rotate the knob to switch between different settings. When the current setting needs to be changed, short press the knob, and there will be flashing characters showing up on the menu. At this time, rotate the knob to switch between different settings, and short press the knob to confirm the setting. Then, the new setting will take effect with no character flashing anymore. Other settings can still be changed.

On the settings menu, hold the knob for about 2s to return to the homepage.

#### 3) Adjust volume

On the homepage, rotate the knob to turn the volume up and down.

### 3. Introduction to Settings menu

Settings menu	Introduction
OUT: Switch output	USB: USB out SPD: Optical and coaxial out
DSD: DSD output	D2P: D2P out DOP: DOP out
LCD-b: Display brightness	1~3 levels adjustable
LCD-T: Screen timeout	1/2/5/10/30 minutes adjustable, "0" means constantly on

RGB-b: RGB light brightness	0/1/2/3/4/5 each represents: Off/1/2/3/4/5-level of brightness
NETWORK: WiFi access	Short press the knob to enter the menu. Select "Y" (yes) on the "Y/N" menu to enter the network access mode.
UPDATE: Firmware update entrance	Short press the knob to enter the menu. Select "Y" (yes) on the "Y/N" menu to enter the firmware update mode.
FW Vxxx	Firmware version
RETURN	Return to the homepage

#### 4. Network connections

The SR11 supports wired Ethernet and wireless WiFi network connections. Choose either of them when using the device.

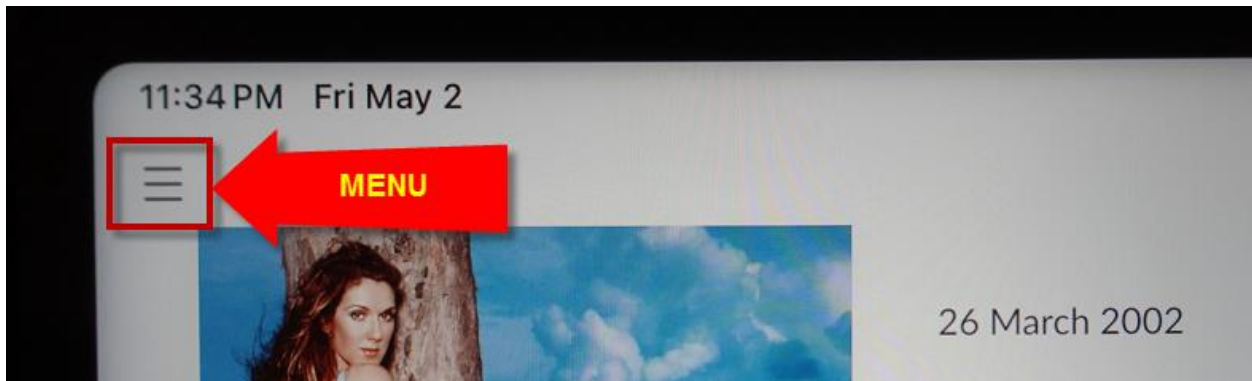
##### 1) Ethernet connection

Plug the Ethernet cable into the Ethernet port of the SR11 to realize a wired network connection. After a successful connection, a letter "G" icon will show on the upper left corner of the status bar of the display, as shown below:

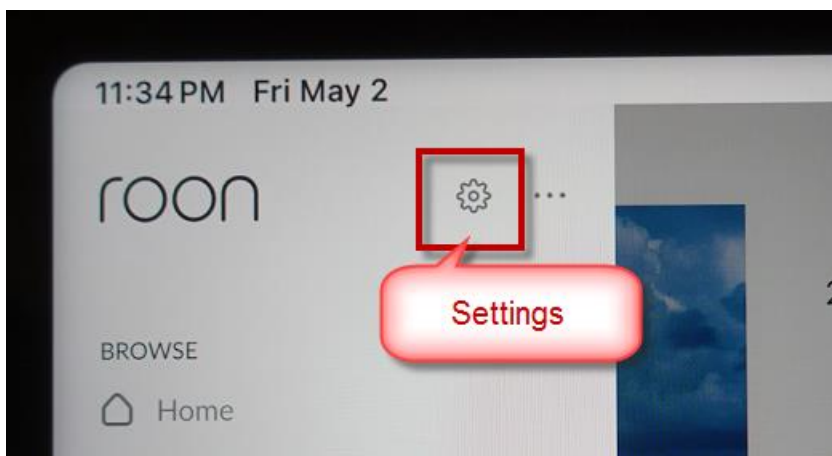


With your Music Streamer connected to your LAN and powered on the ROON Remote App will automatically find this Audio Device. However, you must manually enable this device.

Open the ROON Remote App **MENU**.

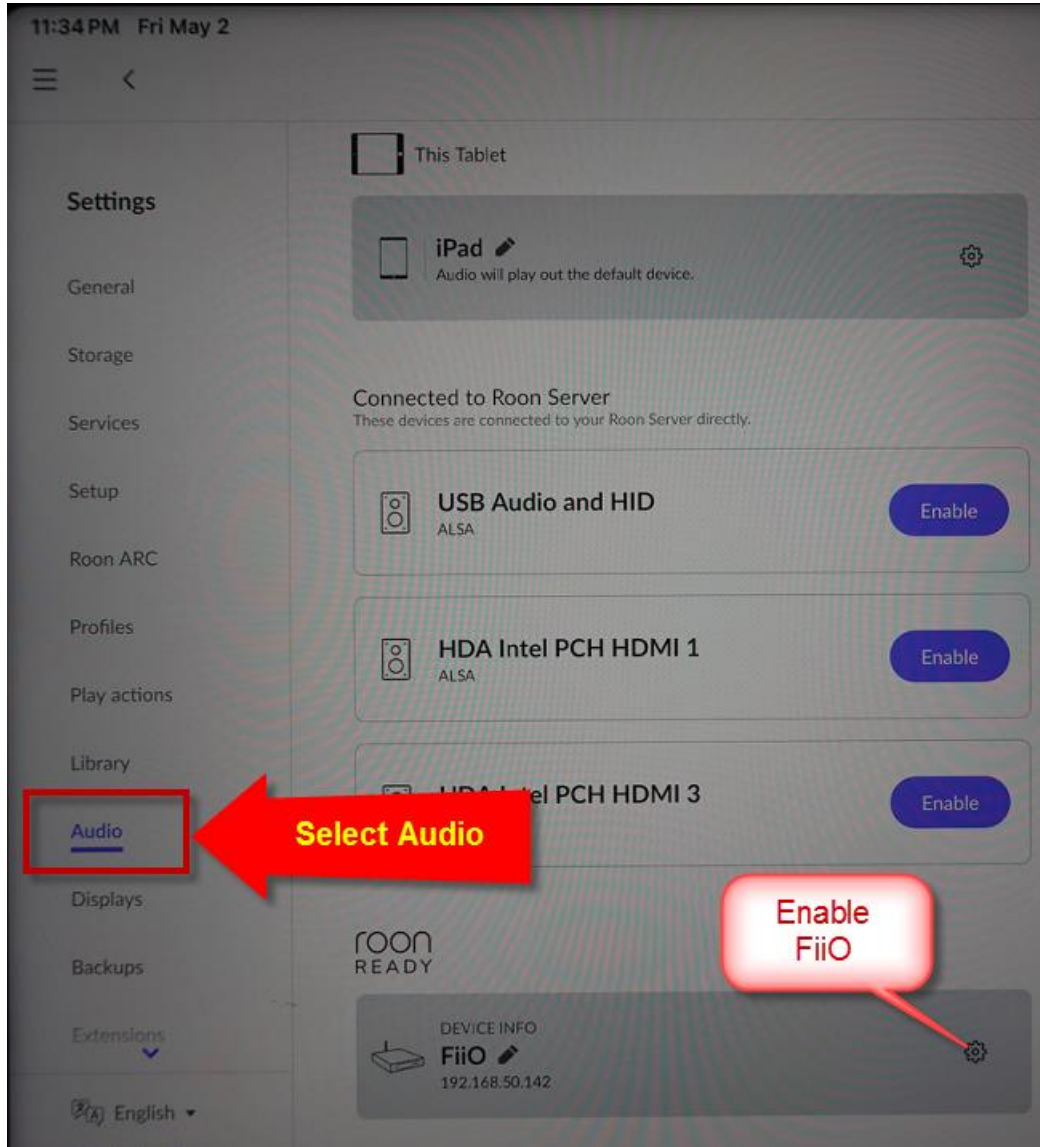


Select **Settings**

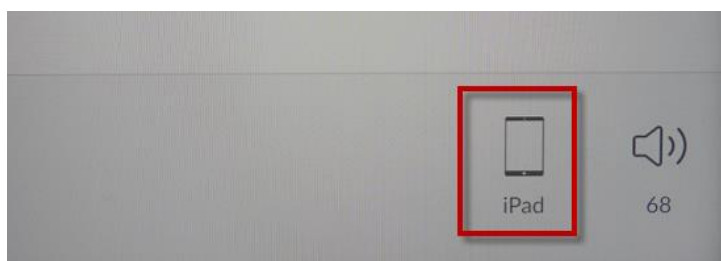


Under the Settings Menu, select **Audio**.  
You will find the FiiO ROON Ready Audio Device.

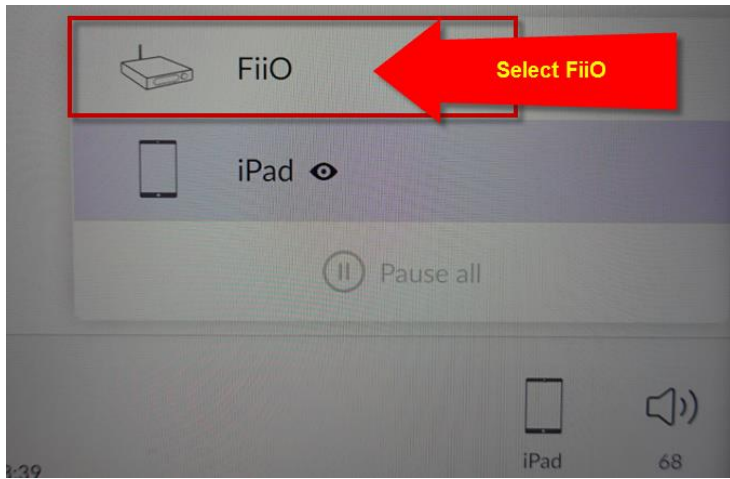
Enable this device by pressing the purple **Enable** Button.



Tap on the iPad icon on the bottom right.



Select **FiiO**. The music will now stream through your SR11 device into your DAC.



The easiest way to toggle between the S/PDIF Output and the USB Output on the SR11 is to press the top right button on the SR11 Remote pictured to the left of the RME ADI-2 DAC Remote.



With the SR11 device set to output S/PDIF, you can select either the **Coaxial Input** or **Toslink Input** connections on the RME ADI-2 DAC, provided you have made both types of connections between your Music Streamer and your DAC.



Switch the SR11 to **USB Output** by pressing the top right button that toggles between USB and S/PDIF



Select the **USB Input** on the RME ADI-2 DAC.



**Note:** When you toggle between S/PDIF and USB Outputs on the SR11, the music being played will pause because the connection gets dropped temporarily.

Press the Play button on your ROON Remote App to resume playback.

Try all three connections and see which one sounds better. Typically a short USB connection between your Music Streamer and DAC will render the best sonic performance.

## Exploring the ROON User Interface

The ROON Remote App can be installed on a Mac or a PC running Windows 10 or higher.

Download the ROON Remote App for Windows PC

<https://ROON.app/en/downloads>

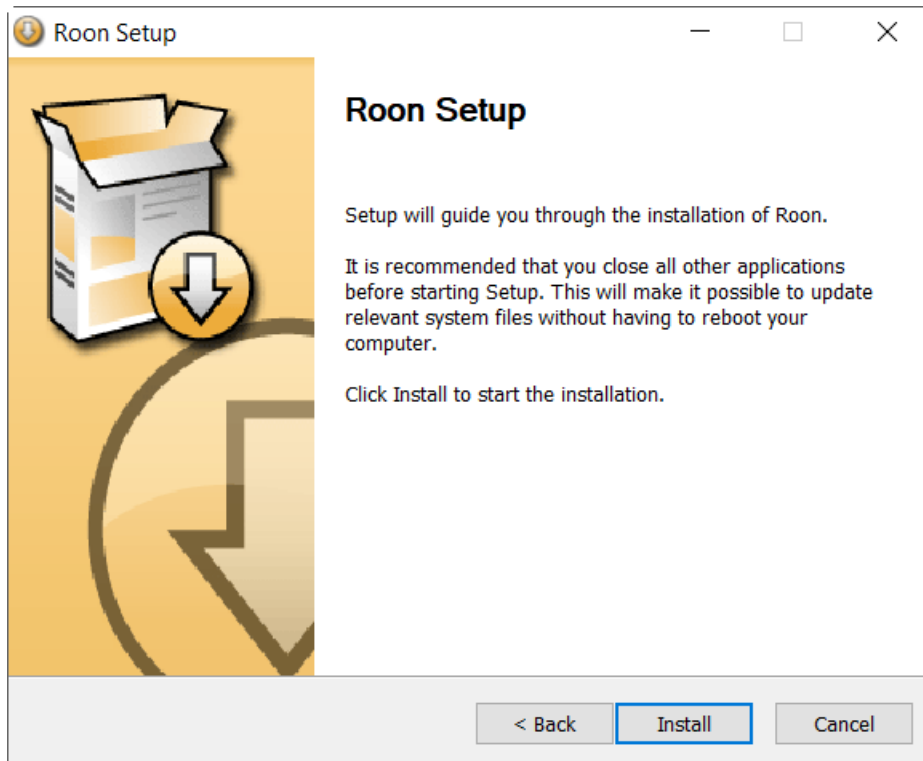
# Download Roon for desktop

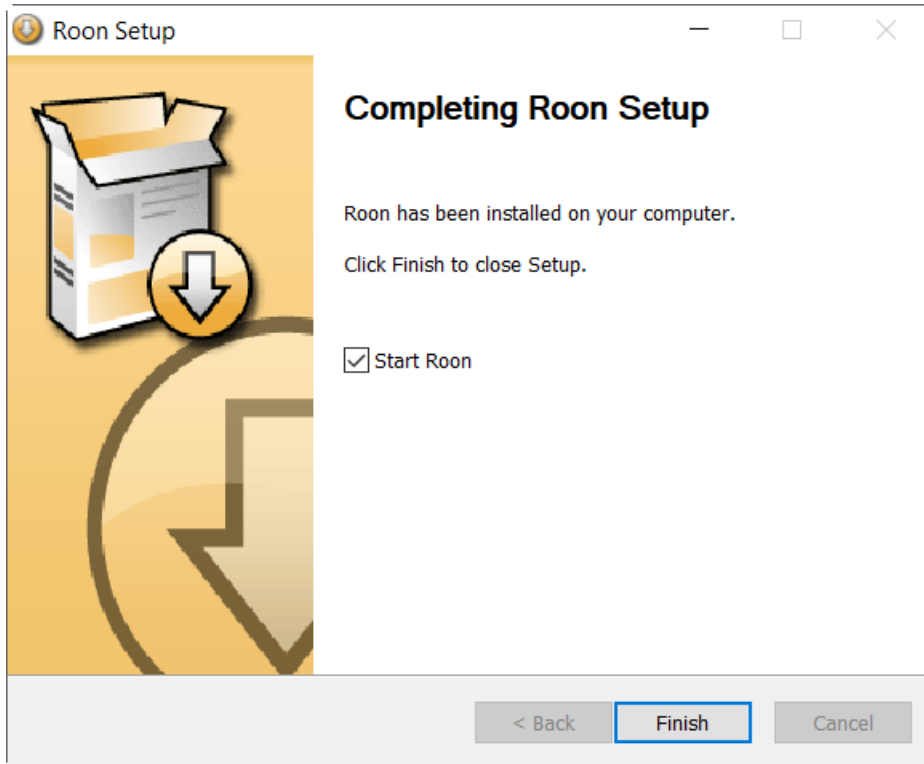
Start by installing Roon on your Mac or Windows PC



<input checked="" type="checkbox"/>	 RoonInstaller64.exe	4/8/2025 11:20 PM	Application	198,602 KB
-------------------------------------	---	-------------------	-------------	------------

Double click this exe file to start your installation.





# roon

The music player for music lovers

Forget everything you know about music players. Music is an experience, and Roon reconnects you with it.

Get started

You have the option of connecting to your existing ROON Optimized Core Kit or set up a ROON Server on this PC.

Press the Connect button to connect to your ROON Optimized Core Kit

## Connect to your Roon Server

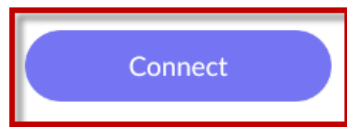
The Roon Server is the brain of your Roon system. It manages your Audio devices, music library, and any Roon Remotes on your network.



### Roon Optimized Core Kit

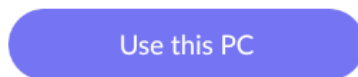
Roon Optimized Core Kit (E051D818EC3F)  
RoonOS 2.1 (build 271) production/192.168.50.97, Version 2.48  
(build 1517) production

● Ready

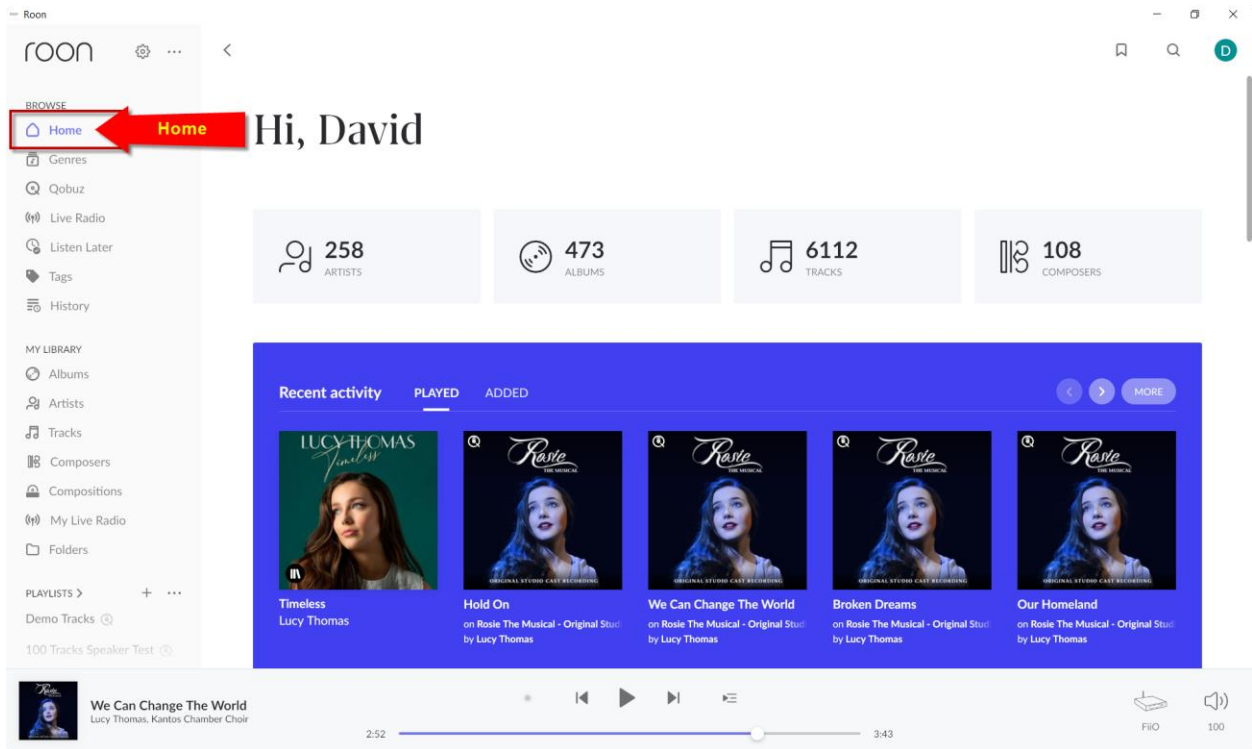


or

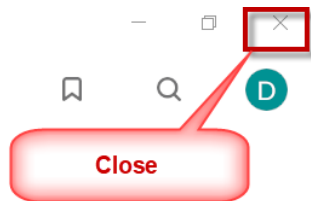
Set up a Roon Server on this PC



This is how the ROON Home Screen will appear on a Windows PC.



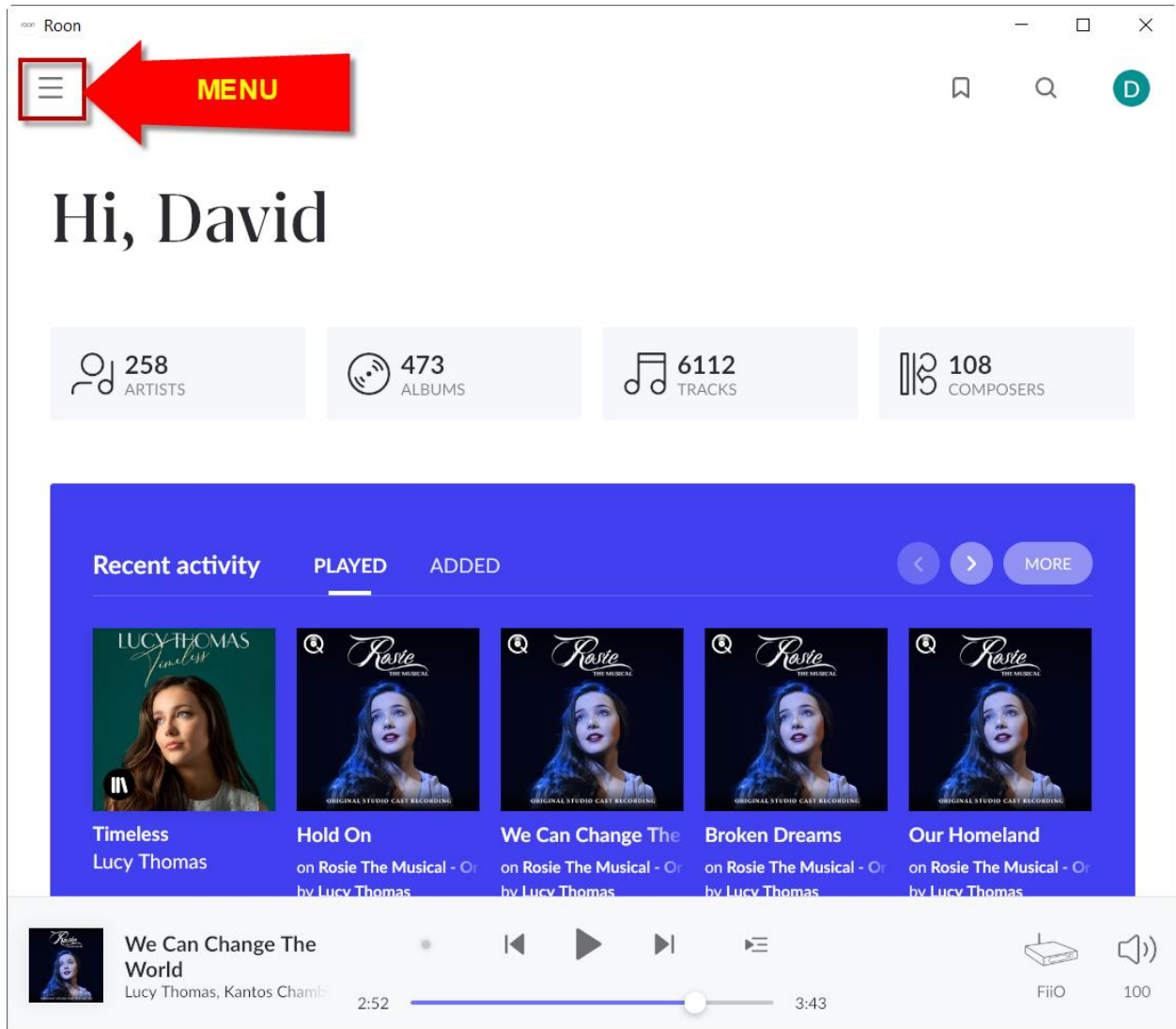
The X icon on the top right closes this app



You can reopen the ROON App by clicking on the ROON Icon on your desktop



Notice, if you open a smaller window your Home Screen would look a bit different.

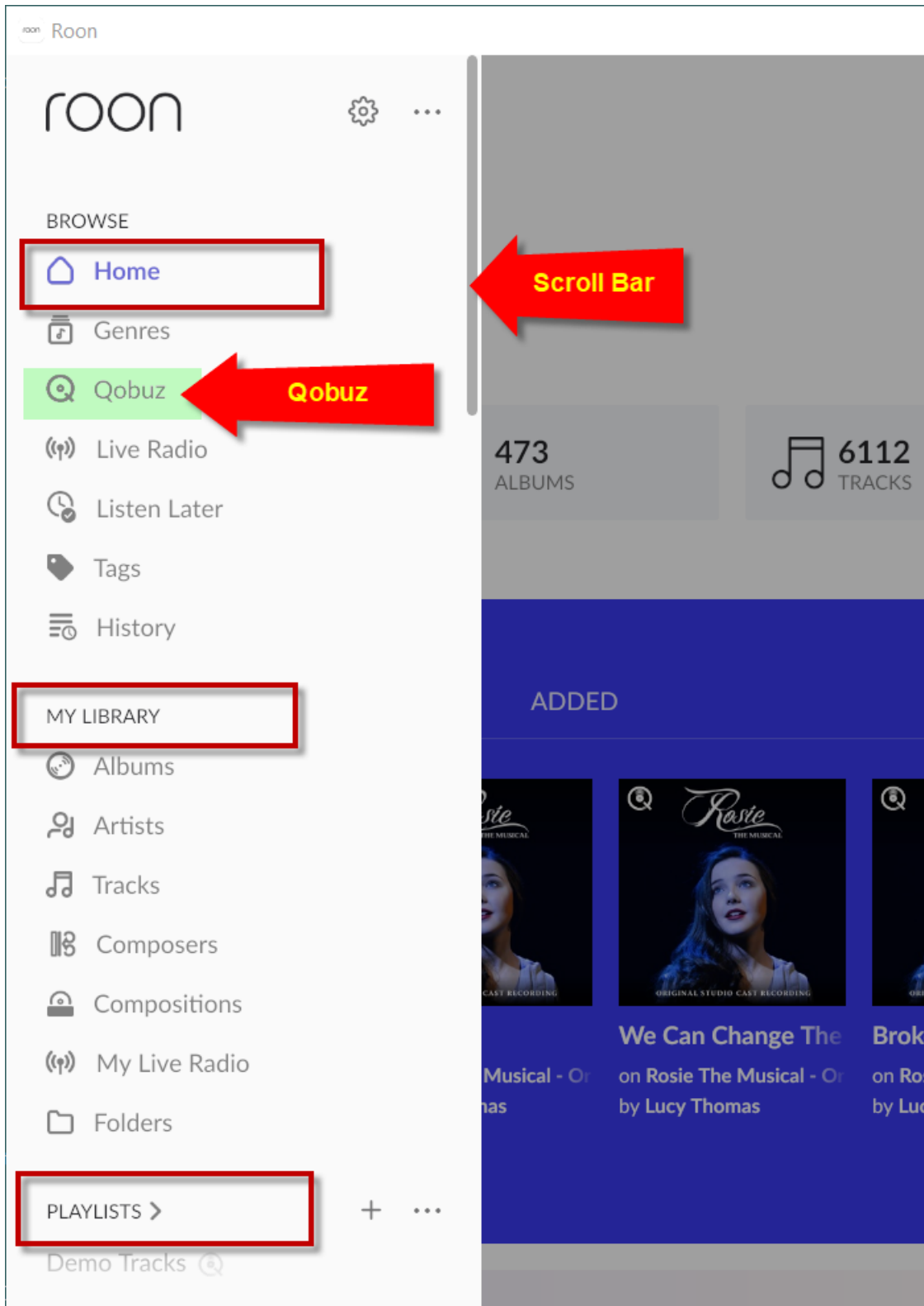


Expand the MENU to see all the choices.

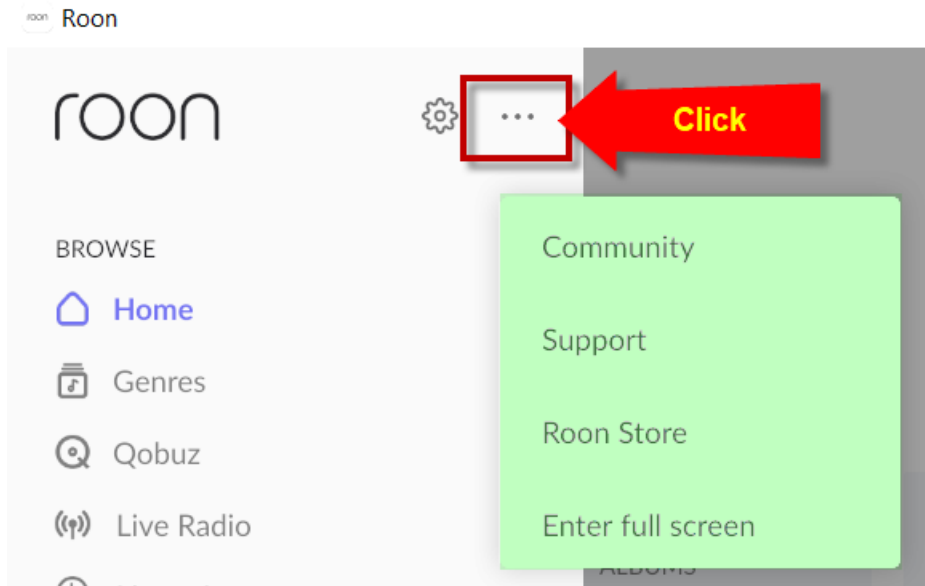
All your choices will be grouped under 3 main Sections:

- BROWSE
- MY LIBRARY
- PLAYLISTS

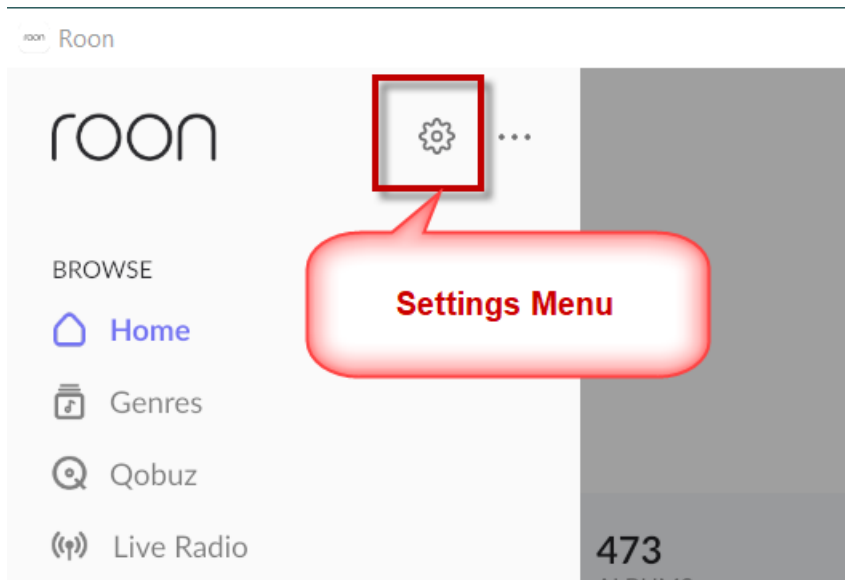
If you have Qobuz or Tidal, it will be listed under the BROWSE Section. Scroll down to see all your Play Lists that you have created.



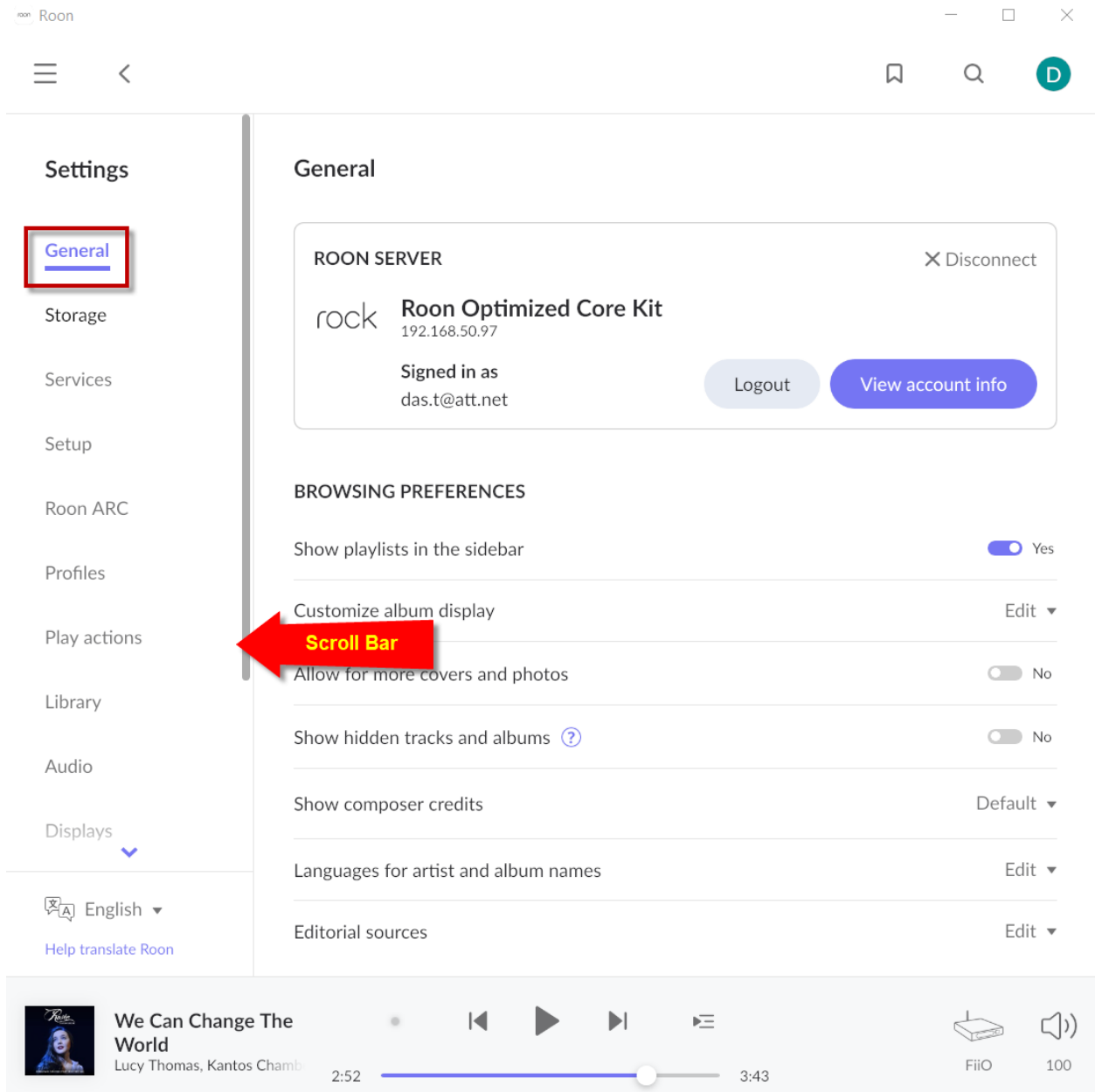
Click on this icon to visit the ROON Community, get support or visit the ROON Store.



Open the Settings Menu

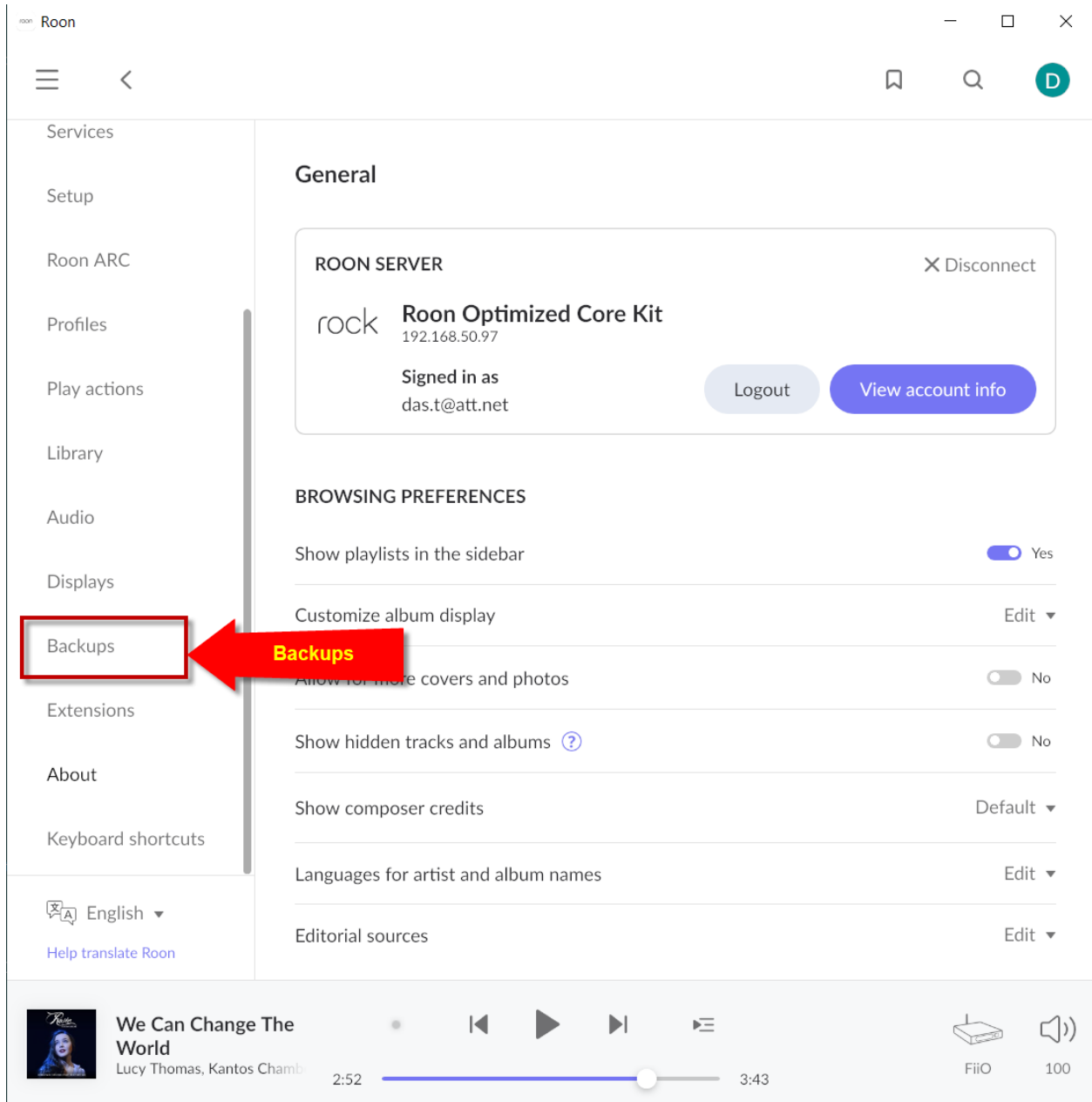


You are viewing the **General** Tab.



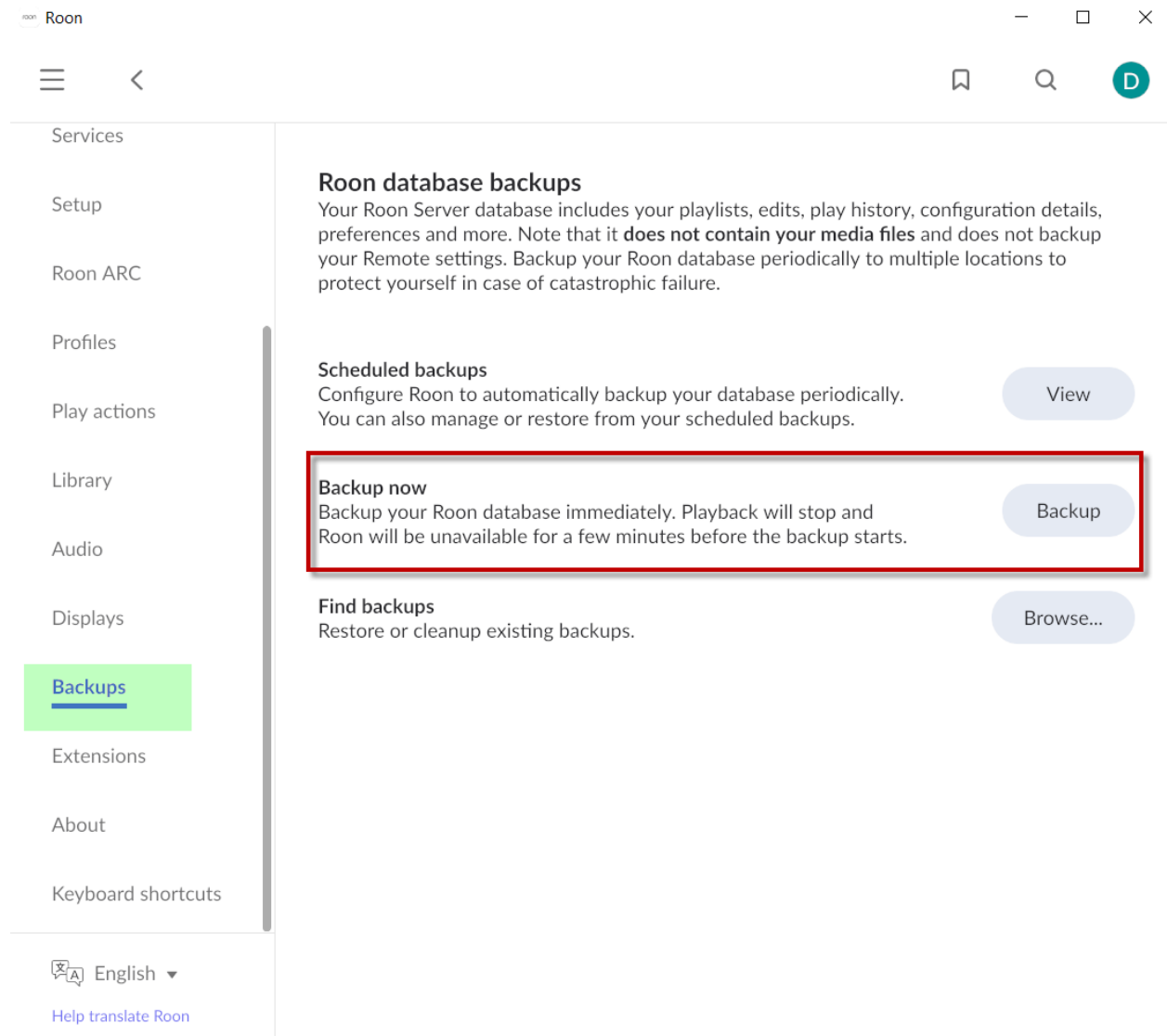
Use the Scroll Bar to see additional choices

## Open the Backups Tab



The screenshot shows the Roon web interface. On the left is a sidebar with a menu. The 'Backups' option is highlighted with a red box, and a red arrow points to it with the word 'Backups' written in yellow. The main content area is titled 'General' and contains several sections: 'ROON SERVER' with a 'Disconnect' button, 'BROWSING PREFERENCES' with various toggle and dropdown settings, and a music player at the bottom. The music player shows the track 'We Can Change The World' by Lucy Thomas, Kantos Chamb, with a progress bar at 2:52 of 3:43. The interface includes standard window controls at the top right and a search icon.

It would be a good idea to create a backup of your ROON Server Database now.



You can schedule ROON to create automatic backups and specify how many backups you want to retain.

You can find existing backups and restore them if necessary.

## Open the **Audio** Tab

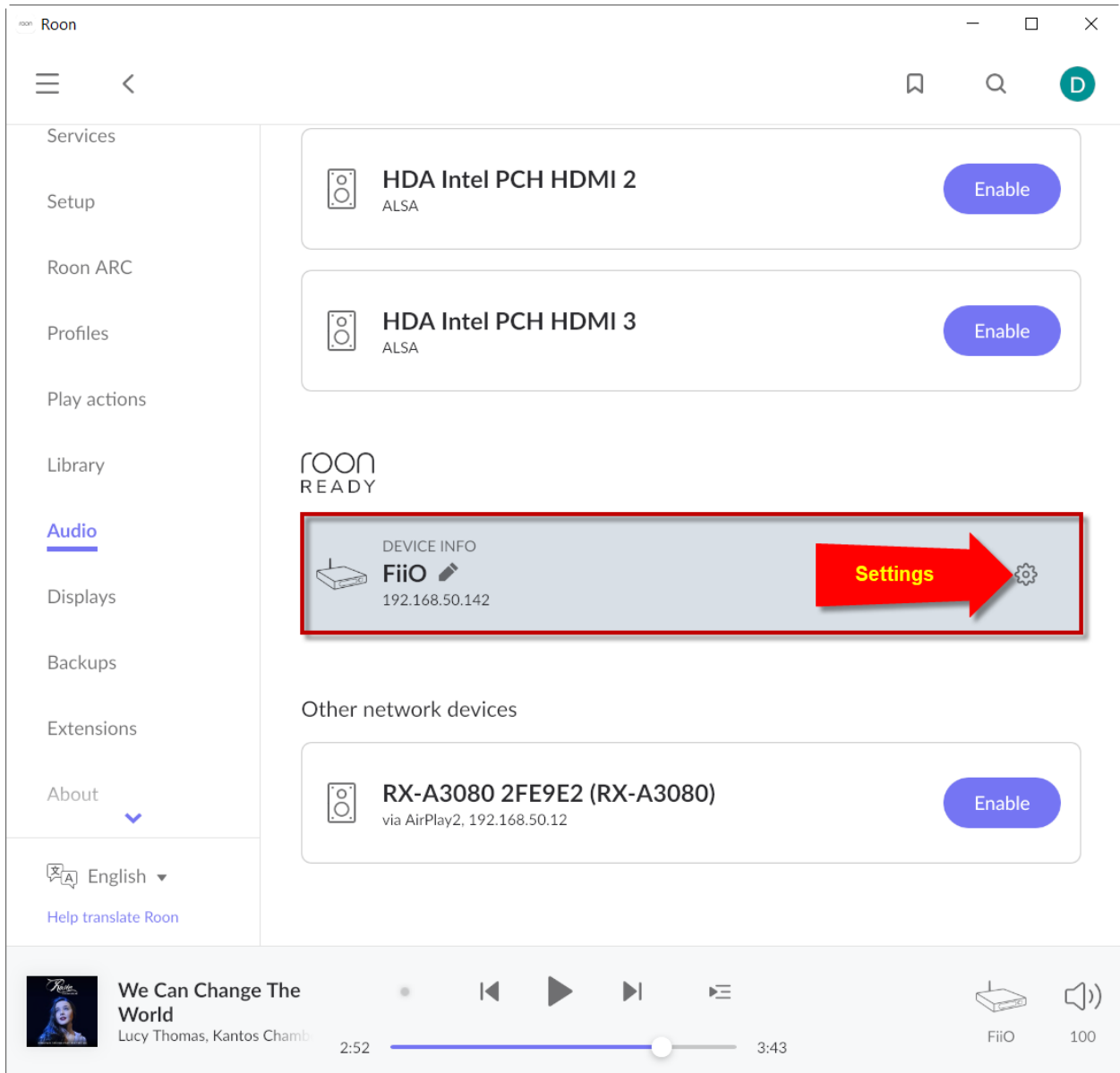
The screenshot displays the Roon application interface. On the left is a sidebar with a menu icon and a back arrow. The sidebar contains the following items: Services, Setup, Roon ARC, Profiles, Play actions, Library, **Audio** (highlighted with a blue underline), Displays, Backups, Extensions, and About. Below the sidebar is a language selection menu showing 'English' and a 'Help translate Roon' link. The main content area is titled 'Audio' and shows 'This PC' with a computer icon. Below this, there is a list of audio devices, each with a speaker icon, a name, a driver type, and an 'Enable' button:

- System Output** (ASIO) - Audio will play out the default device. - Enable
- Realtek High Definition Audio** (WASAPI) - Enable
- Focusrite USB ASIO** (ASIO) - Enable
- RD-2000** (ASIO) - Enable

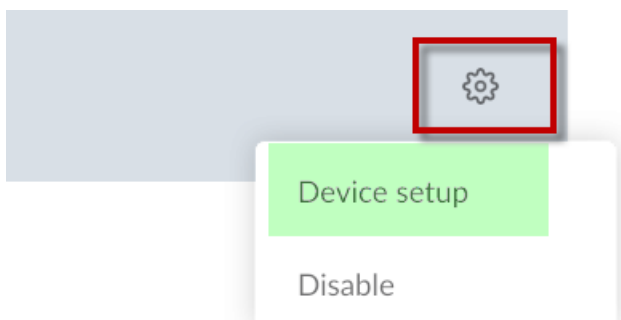
At the bottom of the main content area, it says 'Connected to Roon Server' and 'These devices are connected to your Roon Server directly.' A red arrow labeled 'Scroll Bar' points to the vertical scrollbar on the right side of the device list. At the bottom of the application, there is a music player interface showing the track 'We Can Change The World' by Lucy Thomas, Kantos Chamb. The progress bar is at 2:52 of 3:43. The volume is set to 100% and the output device is FiiO.

Scroll down to see all a list of all the Audio devices available to ROON.

Click on the **Enable** button to enable any Audio device you want to use with ROON.



Once a device has been enabled, you can click on the Settings icon to configure it.



This is the Device setup menu for the FiiO SR11 Music Streamer

## Device setup

[Load defaults](#)

Audio device



**FiiO SR11**

MQA capabilities

No MQA support ▼

Volume control

Device volume ▼

Resync Delay

This setting causes Roon to pre-roll a period of silence each time it switches formats. This gives hardware a chance to synchronize to the new format before the music starts.

0ms ▼

[Hide advanced](#) ▲

Max sample rate (PCM)

Up to 384kHz ▼

Max bits per sample (PCM)

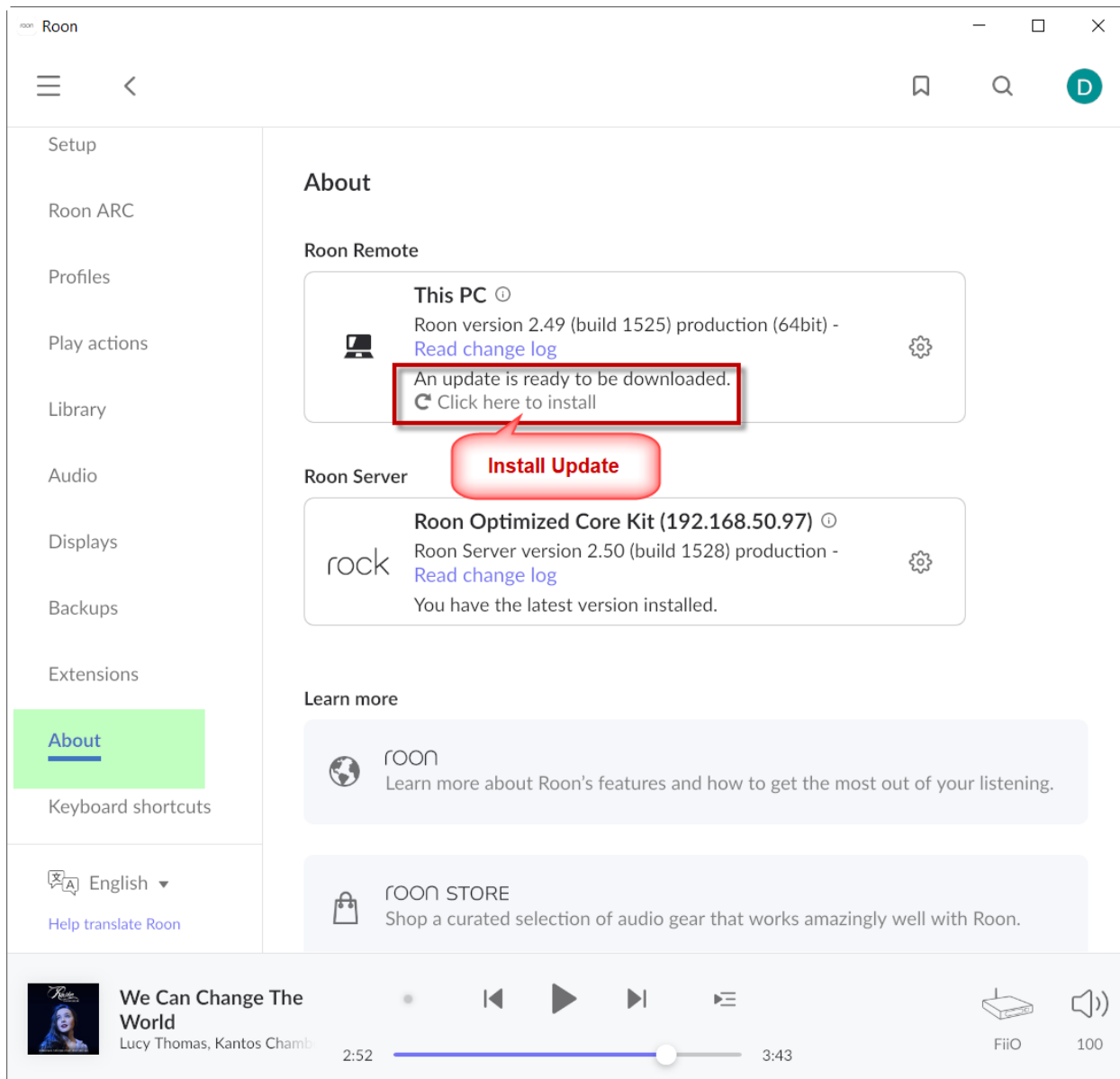
32 ▼

Save

Cancel

Open the **About** Tab

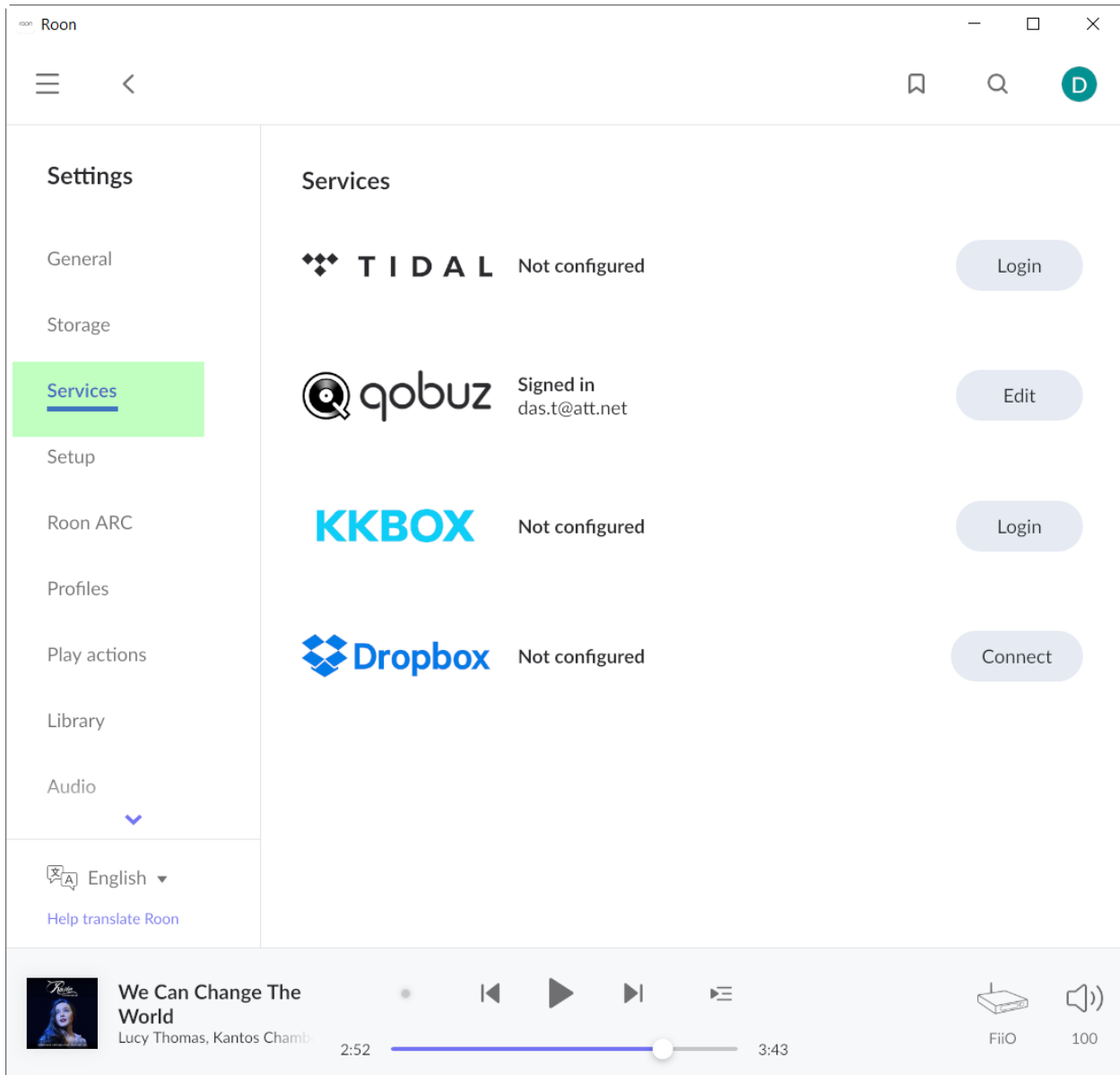
Install available updates for the ROON App or the ROON Optimized Core Kit.



The ROON App will restart after installing updates.

Open the **Services** Tab

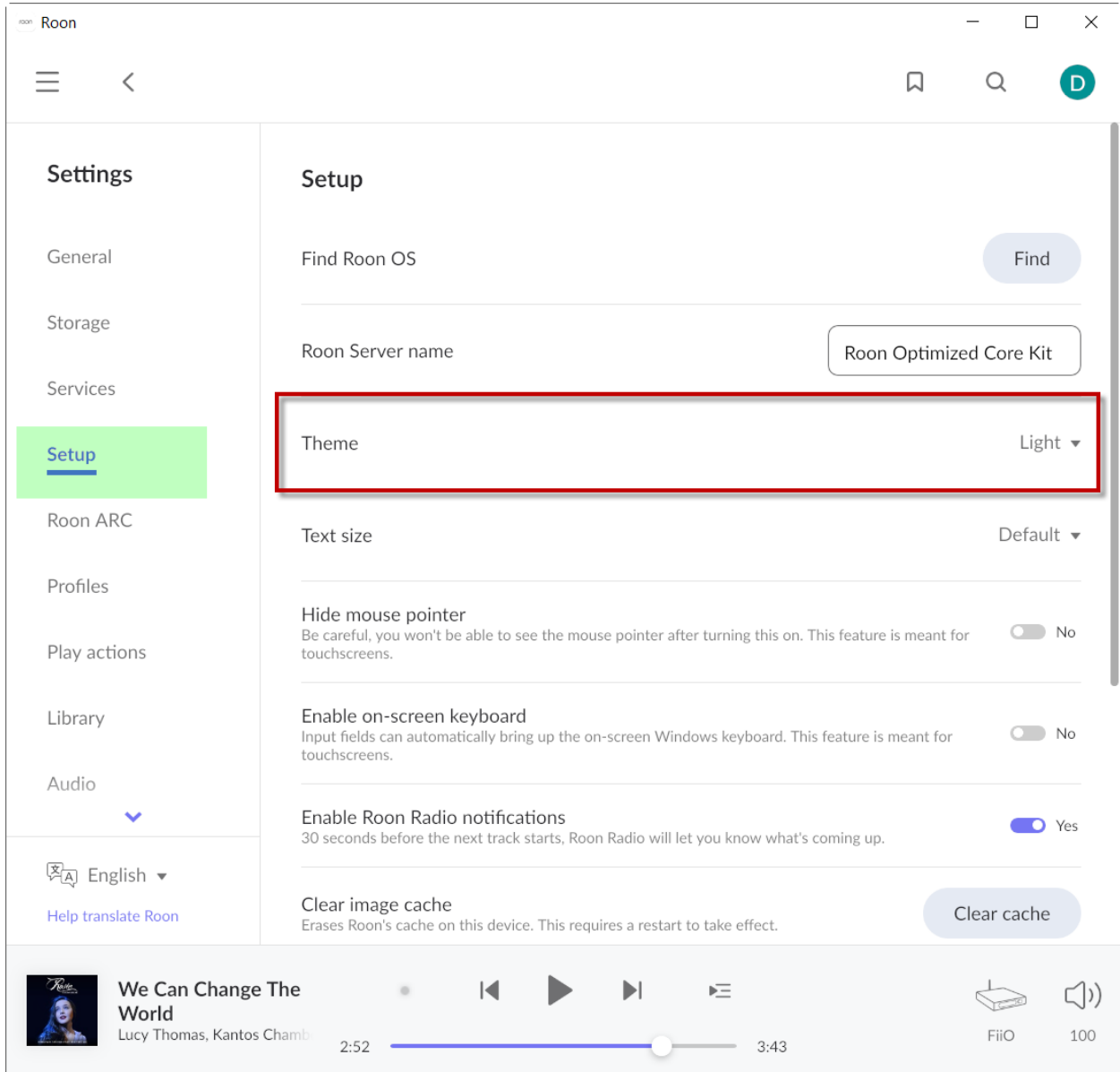
This is where you can manage your Music Subscription Services.



Open the **Setup** Tab

You can change the Theme from Light to Dark.

You can change the Text Size to make it more readable on smaller screens.

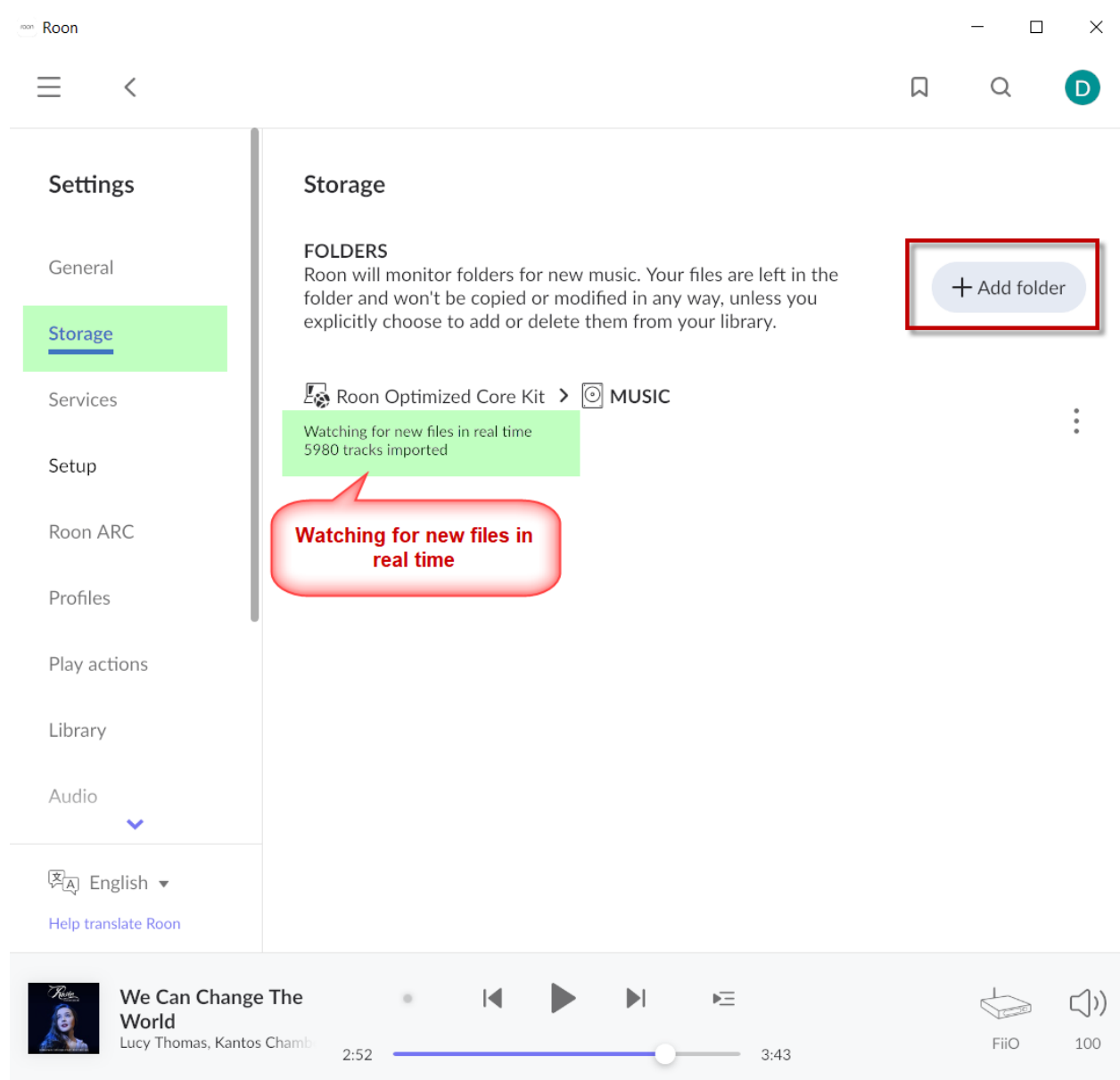


Open the **Storage** Tab

You have already instructed ROON to look for your Music Library in the SanDisk 512 GB microSD card.

ROON would be monitoring this folder. Whenever you add additional music files, ROON would add them to its Database instantly.

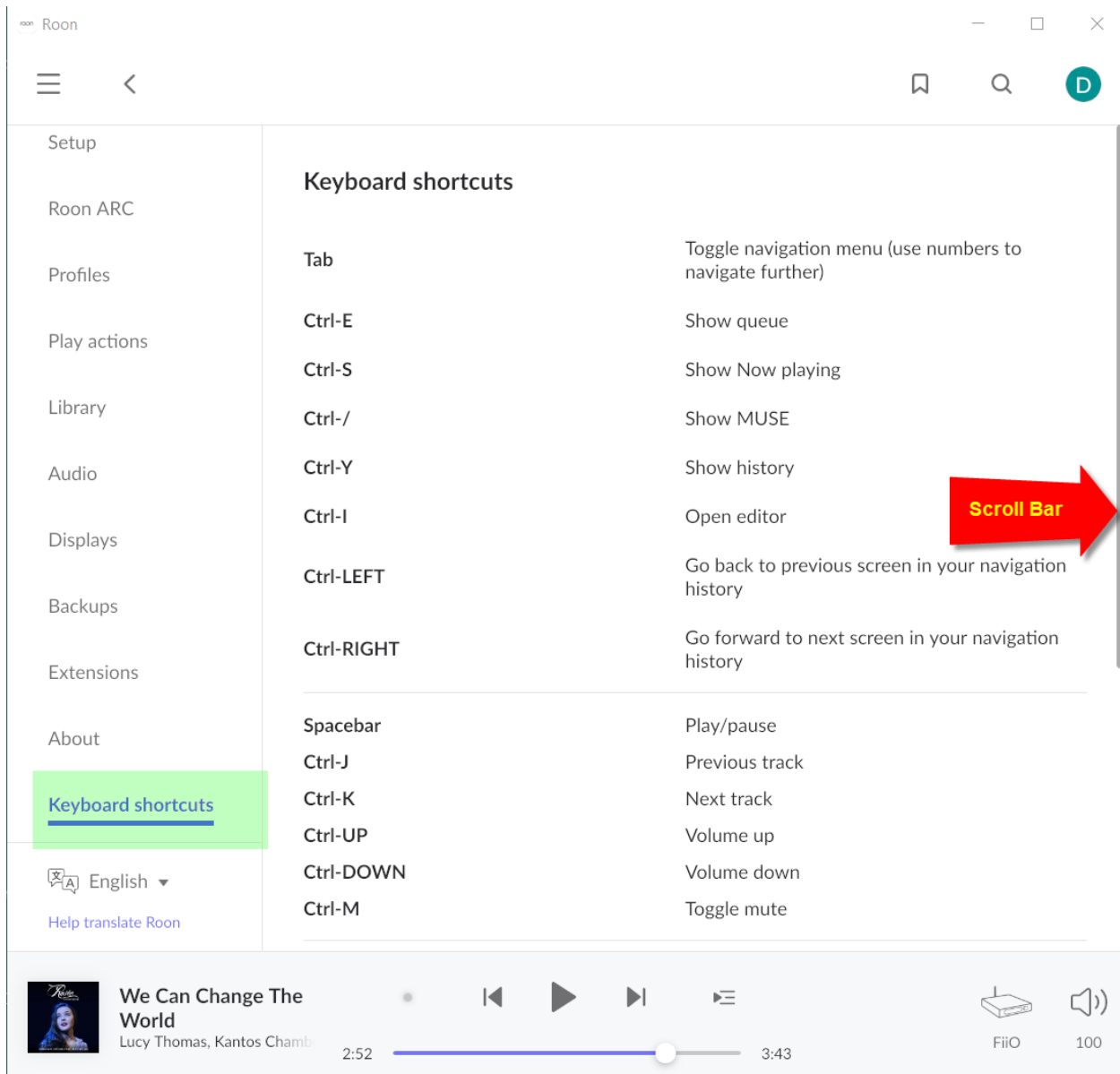
You may add other locations for ROON to look for music files.



Open the **Keyboard Shortcuts** Tab.

The ROON App supports a collection of Keyboard Shortcuts.

Scroll down to see the complete list.

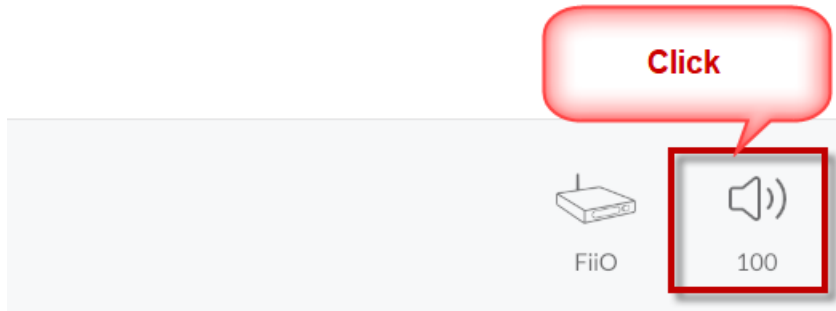


The screenshot shows the ROON App interface with the 'Keyboard shortcuts' tab selected. The left sidebar contains various settings categories, with 'Keyboard shortcuts' highlighted in green. The main content area displays a list of keyboard shortcuts and their functions. A red arrow labeled 'Scroll Bar' points to the vertical scrollbar on the right side of the list.

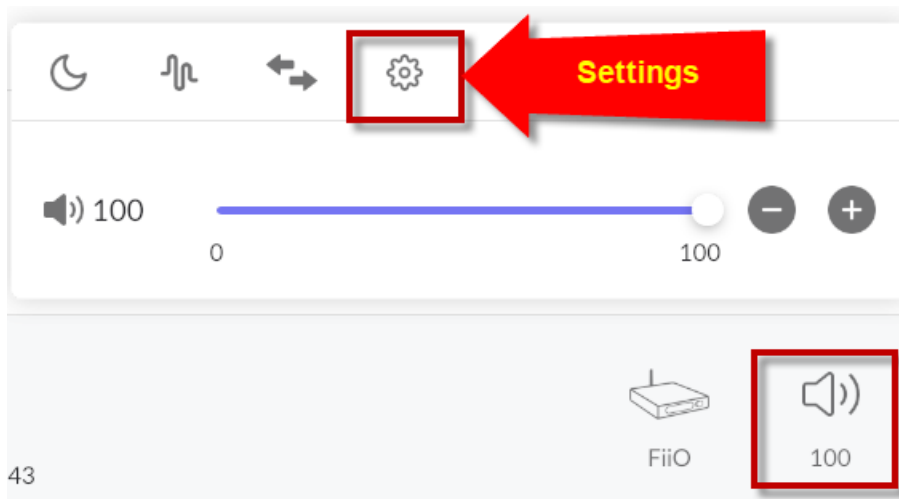
Shortcut	Function
Tab	Toggle navigation menu (use numbers to navigate further)
Ctrl-E	Show queue
Ctrl-S	Show Now playing
Ctrl-/	Show MUSE
Ctrl-Y	Show history
Ctrl-I	Open editor
Ctrl-LEFT	Go back to previous screen in your navigation history
Ctrl-RIGHT	Go forward to next screen in your navigation history
Spacebar	Play/pause
Ctrl-J	Previous track
Ctrl-K	Next track
Ctrl-UP	Volume up
Ctrl-DOWN	Volume down
Ctrl-M	Toggle mute

At the bottom of the screen, a music player interface is visible, showing the track 'We Can Change The World' by Lucy Thomas, Kantos Chamb. The progress bar indicates 2:52 of a 3:43 duration. The volume is set to 100% and the output device is FiiO.

ROON has a useful feature that allows you to normalize the volume of all your tracks during playback. To enable this feature, click on the Volume Icon on the bottom right.



Click on the Settings Menu



Set Volume leveling to **Auto**

## Zone settings

### Zone name

FiiO

FiiO SR11

### Zone icon



[Edit zone icon](#)

### Zone options

Crossfade time

0 seconds ▾

Volume leveling

Auto ▾

Target volume level

-14LUFS (Default) ▾

Volume adjustment when loudness is unknown

-5dB ▾

### Audio device



DEVICE INFO

**FiiO SR11**

192.168.50.142



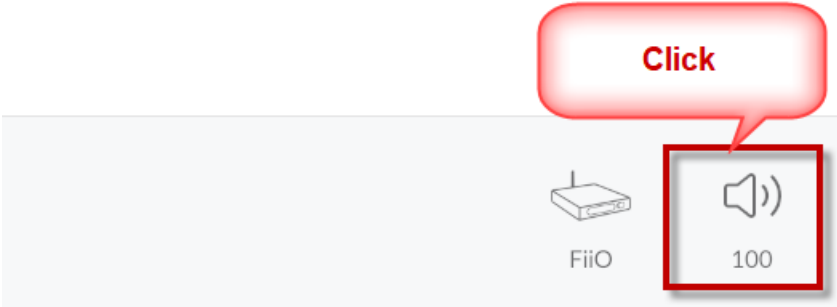
Volume  
Limits



Device  
Setup

Beside volume leveling, ROON can use the MUSE algorithm to alter your audio signal by applying EQ and Filters. This is a powerful feature that enables ROON to host the Convolution Filters generated by ACOURATE.

Click on the **Volume** Icon.



Click on the **MUSE** icon to open the MUSE control panel.



You will be importing the FIR Filters generated by ACOURATE within the Convolution Engine. At the moment all filters are disabled.

**MUSE**  
Precision Audio Control

Presets  
No preset set ▾

FiiO

Headroom management  
Disabled

Sample rate conversion  
Disabled

**Filters** Bypass all filters

Crossfeed  
Disabled

Parametric EQ  
Disabled

Headphone EQ  
Disabled

**Convolution**  
Disabled

+ Add filter

### Precision audio control

MUSE algorithmically alters the audio signal, using tools like EQ, upsampling, and more.

No system is perfect. No room is perfect. No content is perfect. Room offers a suite of algorithms that can be used to help all of them reach their full potential.

Learn more about MUSE on our [knowledge base](#).

Expand to learn more about the ROON Convolution Engine.



## Convolution

Convolution is a powerful signal processing method that is commonly used for things like room correction, headphone listening, or surround processing.

Roon does not generate Convolution filters--this is done using an external piece of software.

Roon supports Convolution filters in several forms:

- An impulse response file, usually in .wav format, that describes the filter
- A .zip file containing one or more impulse response files
- A .zip file containing one or more convolver-style .cfg files and their associated impulse response files

In cases where a .zip file with multiple filters is provided, Roon will choose the best match filter by considering the sample rate and channel configuration of the source material.

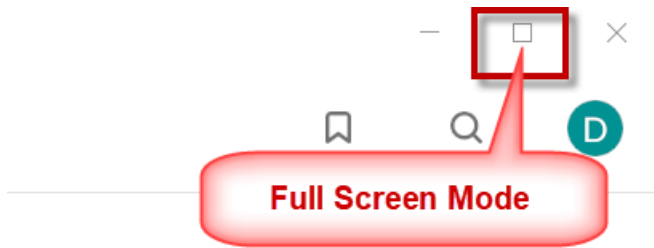
For more detailed documentation on Roon's convolution feature, [see here](#).

Currently selected filter

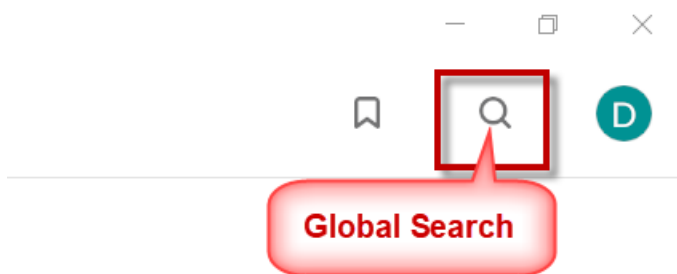
(none)

Browse...

Enter Full Screen Mode.

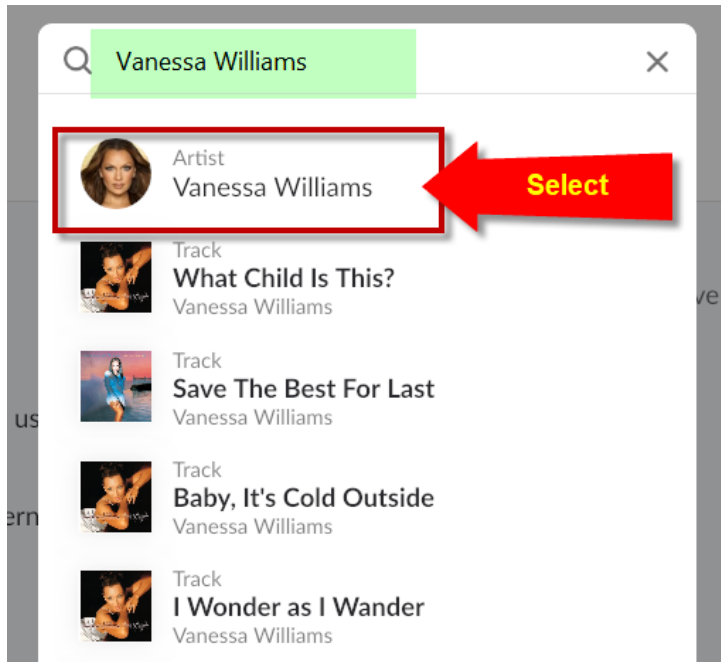


Open the Global Search



Enter Vanessa Williams

Select Artist = Vanessa Williams



This opens the Landing Page for Vanessa Williams

Open the **DISCOGRAPHY** Tab.

The screenshot shows the Spotify artist page for Vanessa Williams. At the top left, there is a back arrow, and at the top right, there are icons for a bookmark, search, and a profile icon. The main header features the artist's name "Vanessa Williams" in a large, bold font. Below the name is a "Play now" button with a play icon and a dropdown arrow, and three circular icons for heart, share, and more options. To the right of the text is a large photograph of Vanessa Williams sitting on a red leather couch against a brick wall. Below the photo is a small "Improve this photo" link. Underneath the photo are three tabs: "OVERVIEW", "DISCOGRAPHY" (which is highlighted with a red box), and "COMPOSITIONS". Below these tabs are four genre filters: "ADULT CONTEMPORARY", "ADULT CONTEMPORARY R&B", "DANCE-POP", and "R&B". The main content area contains a biographical paragraph: "Vanessa Lynn Williams (born March 18, 1963) is an American singer, actress, model, producer and dancer. She gained recognition as the first Black woman to win the Miss America title when she was crowned Miss America 1984. She would later resign her title amid a media controversy surrounding". To the right of this paragraph is a "Born" section with the text: "18 March 1963 (aged 62) The Bronx, New York City, New York, USA". At the bottom left, there is a "Tracks" section with sub-tabs for "POPULAR" and "MY LIBRARY" (which is highlighted with a red line). At the bottom right, there is a "MORE" button.

Vanessa Williams has 14 Main Albums.

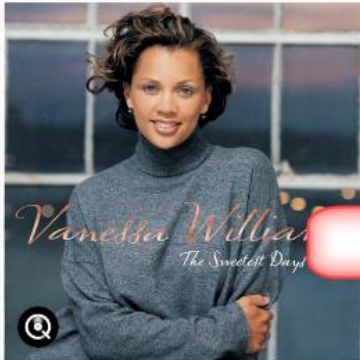
The icons on the cover art will tell you if this Album is in your Music Library or on a Music Streaming Service you have subscribed to like Qobuz.

> Focus



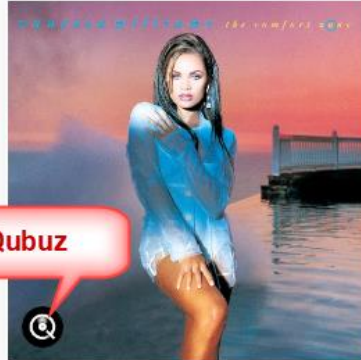
Main albums (14)

14 Main Albums



6 December 1994

The Sweetest Days  
Vanessa Williams



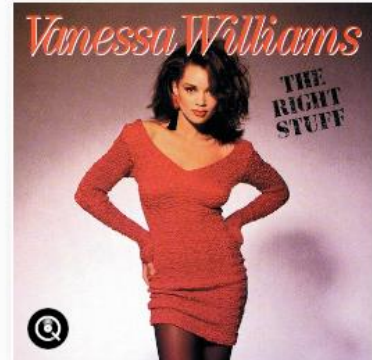
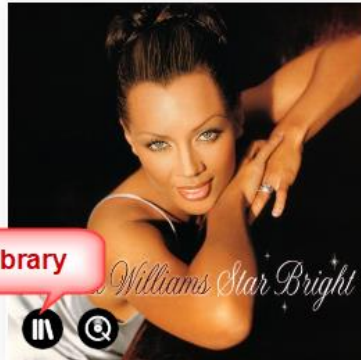
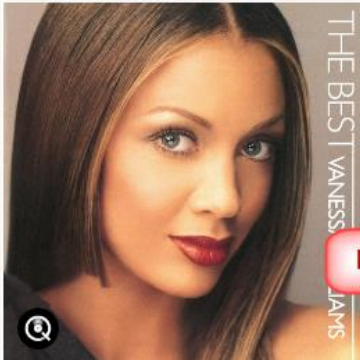
20 August 1991

The Comfort Zone  
Vanessa Williams



2 June 2009

The Real Thing (Album Version)  
Vanessa Williams



Select the **Star Bright** Album



All the tracks in this Album will be listed.

The image shows the album page for 'Star Bright' by Vanessa Williams on a music platform. The album cover is on the left, and the album title and artist name are prominently displayed. Below the title, there are buttons for 'Play now', 'Add to library', 'Share', and 'More options'. There are also genre tags: ADULT CONTEMPORARY, CHRISTMAS, CONTEMPORARY R&amp;B, HOLIDAY, HOLIDAYS, and R&amp;B. A descriptive paragraph follows, mentioning that the album blends jazz, gospel, and soul music. To the right, technical details are listed: Length (51 minutes), Rating (★★★★☆), Format (FLAC 44.1kHz 16bit), Dynamic range (∞/10), and Images (2 Images). Below this, there are tabs for TRACKS, CREDITS, and VERSIONS. The TRACKS tab is active, showing a list of tracks. The first track is 'Do You Hear What I Hear/The Little Drummer Boy' with a duration of 5:02 and 7 plays. The second track is 'Star Bright' with a duration of 3:37, 3 versions, and 4 plays. There are also 'Focus' and 'Filter' options at the top of the track list.

Select any Track and click on **Play now** from the Menu.



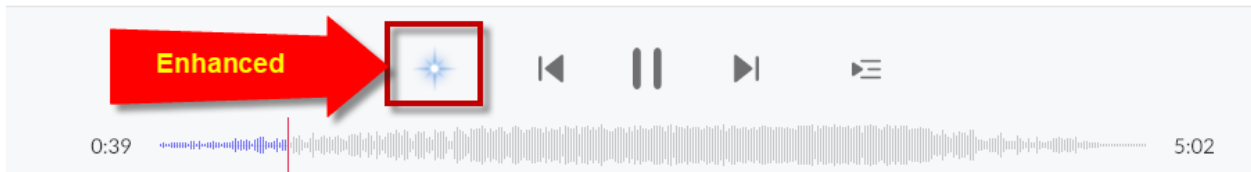
Press the **PLAY** button



Music will begin to play through your FiiO SR11 Streamer.

Whenever you see a starburst icon, click on it to view more information.

In this instance you can view the Enhanced Signal Path.

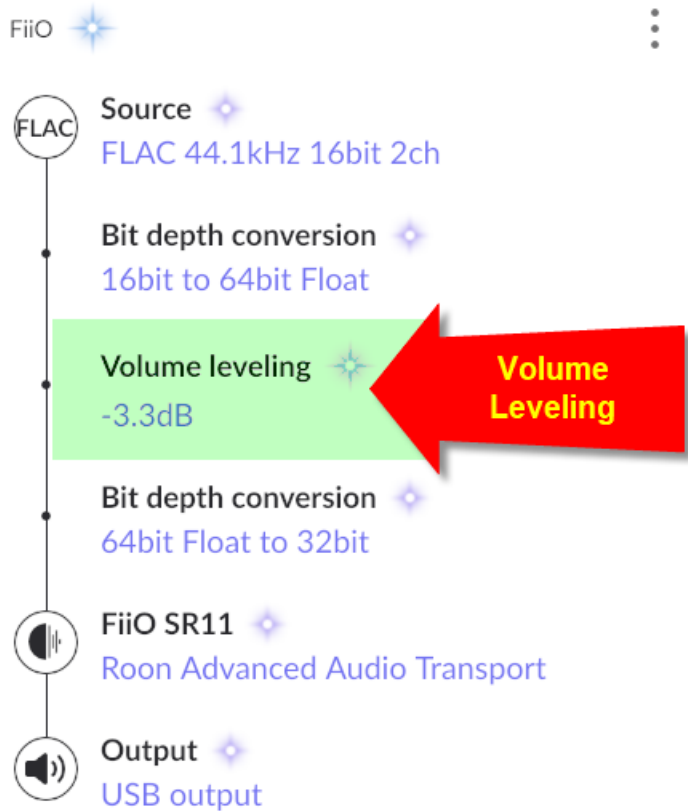


The source is a FLAC 44.1kHz 16bit stereo track from your Music Library.

ROON has dropped the volume by 3.3dB to normalize this track.

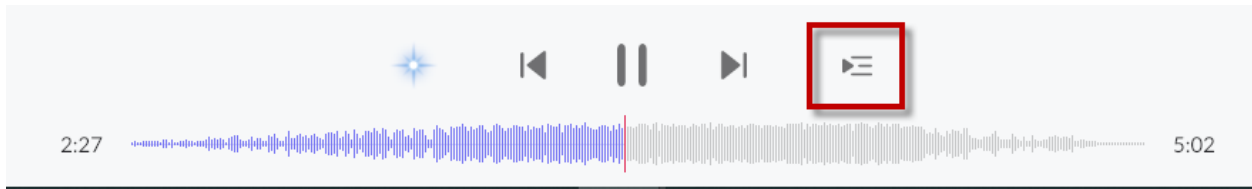
### Signal path: Enhanced

Click on any stage of the path to Learn more

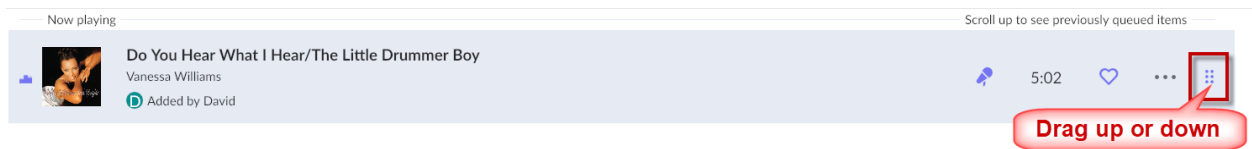


FiiO SR11

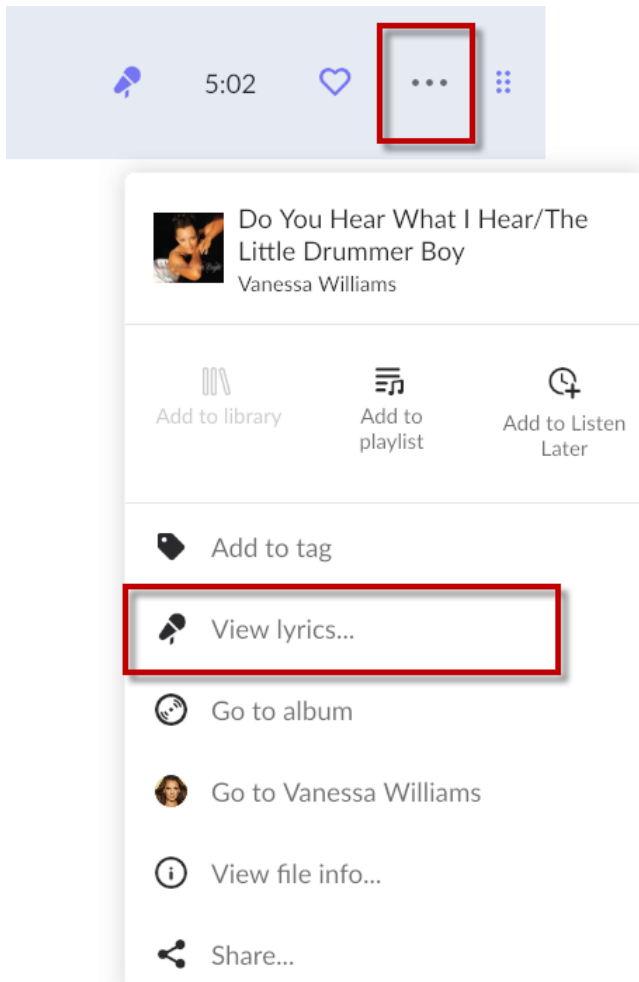
Click on this Icon to view the list of tracks you have cued up.



You can rearrange the order by dragging the tracks up or down in the cue list.



Open the Track Menu and Select **View Lyrics...**



These are the Lyrics to the Song.

You can change the Text size.

## Track lyrics

Normal text size ▼

### Do You Hear What I Hear/The Little Drummer Boy



by Vanessa Williams

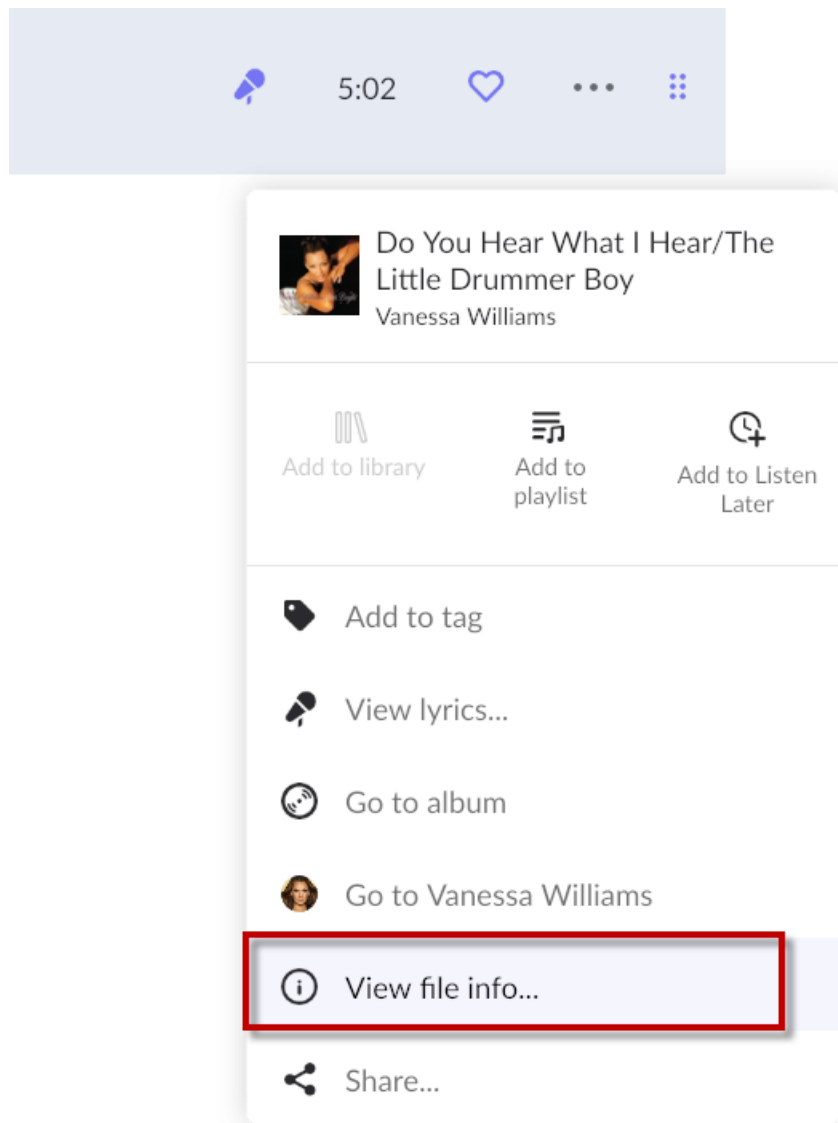
Said the nightwind to the little lamb  
Do you see what I see  
Way up in the sky little lamb  
Do you see what I see

A star, a star, dancing in the night  
With a tail as big as a kite  
With a tail as big as a kite

Said the little lamb to the shepherd boy  
Do you hear what I hear  
Ringing through the sky shepherd boy  
Do you hear what I hear

A song, a song, high above the trees  
With a voice as big as the sea  
With a voice as big as the sea

Click **View File Info...**



The File Info will show you when you created the FLAC file and when this was added to the ROON Music Database.

## File info

### Do You Hear What I Hear/The Little Drummer



by Vanessa Williams



[File tags](#)  
[Copy file path to clipboard](#)

#### FILE INFO

Source	Format	Sample rate	Channels	Bits per sample	Added
Local	FLAC	44.1kHz	2ch	16bit	6 Apr 2025
Modified	Created				
15 Sep 2020	15 Sep 2020				

#### VOLUME LEVELING (R128)

Track gain	Album gain	Dynamic range (R128)
-12.3dB (1.6dBTP)	-12.3dB (3.2dBTP)	∫ <sub>13</sub> 13.3 LU

You will get to view the **Dynamic Range** of this track.

Click on the Back Button to go back.



Queue 1 track remaining (4:05)

Now playing



**Do You Hear What I Hear/The Little Drummer Boy**  
Vanessa Williams  
Added by David

Click on **VERSIONS**

You have two versions of this track.

You are currently playing the version stored in your Music Library.

The path to this Album in your Local Library is:


ROON Optimized Core Kit > MUSIC > MusicLibrary > FLAC > Star Bright

Star Bright  
Vanessa Williams

TRACKS CREDITS **VERSIONS**


**1 library version**

Currently viewing

 **Star Bright**  
Vanessa Williams 12 tracks  
FLAC 44.1kHz 16bit  
Dynamic range  $\nearrow$  10

Storage location  
Roon Optimized Core Kit > MUSIC > MusicLibrary > FLAC > Vanessa Williams > Star Bright

**1 Qobuz version**

 **Star Bright**  
Vanessa Williams 12 tracks  
FLAC 44.1kHz 16bit [+ Add to library](#)

There is a Qobuz version available as well.

Click on **TRACKS**

	<b>TRACKS</b>	CREDITS	VERSIONS	
> Focus				Filter
	Do You Hear What I Hear/The Little Drummer Boy		5:02	▶11 ...
✓	Star Bright	3	3:37	▶4 ...
	Hark! The Herald Angels Sing (Shout)		5:34	▶3 ...
	Baby, It's Cold Outside <small>Performed by Vanessa Williams, Bobby Caldwell</small>	970	4:51	▶2 ...
	I Wonder as I Wander <small>Performed by Vanessa Williams, Bobby Caldwell</small>	433	4:40	▶1 ...
	Sleep Well, Little Children	9	0:40	▶1 ...
✓	Angels We Have Heard on High	575	4:58	▶2 ...
	The First Noel	120	4:28	▶2 ...



The number associated with a Track indicates available recordings by other Artists.








# The First Noel

Composed by Unknown Composer

120 recordings  
3 minutes



You can audition the recording of this Song by other Artists.

	Released 2 October 2012 <b>The First Noel</b> PERFORMED BY Elvis Presley	APPEARS ON The Classic Christmas Album
	Released 1990 <b>The First Noel</b> PERFORMED BY W.G. Snuffy Walden	APPEARS ON A Windham Hill Christmas
	Released 29 October 1996 <b>The First Noël (Album Version)</b> PERFORMED BY Collin Raye	APPEARS ON Christmas: The Gift
	Released 10 October 2008 <b>The First Noel</b> PERFORMED BY Elvis Presley	APPEARS ON Elvis Presley Christmas Duets
	Released 1982 <b>The First Noel</b> PERFORMED BY Lewis Ross, The New American Guitar Ensemble, Lewis Ross	APPEARS ON A Collection of Favourite Christmas Carols
	Released 2001 <b>The First Noel</b> PERFORMED BY NewSong	APPEARS ON The Christmas Shoes
	Released 1991 <b>The First Noel</b> PERFORMED BY George Howard	APPEARS ON GRP Christmas Collection Volume II

Click on CREDITS



5 November 1996

# Star Bright

Vanessa Williams

▶ Play now ▾

- ADULT CONTEMPORARY
- CHRISTMAS
- CONTEMPORARY R&B
- HOLIDAY
- HOLIDAYS
- R&B

With the help of some talented friends, charming pop vocalist [Vanessa Williams](#) blends in the beauty of jazz, gospel, and soul music to create a portrait of Christmas songs. The record, entitled *Star Bright*, is genuinely filled with a glistening appeal, and the songs that it contains encompass a rich

**Length** 51 minutes  
**Rating** ★★★★★☆  
**Format** FLAC 44.1kHz 16bit  
**Dynamic range** ∞ 10  
**Images** 2 Images

TRACKS **CREDITS** VERSIONS

> Focus

- ▶ Do You Hear What I Hear/The Little Drummer Boy 5:02 ▶10
- ▶ ✓ Star Bright 3 3:37 ▶4

TRACKS **CREDITS** VERSIONS

Q Credits & roles

### Credited on "Star Bright"



**David Foster**  
Keyboard  
1 track



**Vanessa Williams**  
Background Vocals  
All tracks



**Bobby Caldwell**  
Performer  
2 tracks



**Rob Mathes**  
Soloist, Background Vocals, Electric Guitar, Keyboard, Piano, Organ



**Ed Calle**  
Soloist, Soprano Saxophone, Tenor Saxophone

Scroll down.

You will find additional Performers and Composers on "Star Bright"

### Also performs on "Star Bright"

---



**Andy Davis**  
Trombone



**Angela Clemmons-Patrick**  
Background Vocals



**Carol Webb-Sortomme**  
Violin



**Claremont School Singers**  
Vocals



**Curtis McKonly**  
Keyboard, Conductor



**Diane Barere**  
Cello, Celli

### Composers on "Star Bright"

---



**My Morning Jacket**  
Arranger  
[1 track](#)



**David Foster**  
Arranger  
[1 track](#)



**Marty Paich**  
Arranger, Orchestration  
[1 track](#)



**Rob Mathes**  
Arranger, Orchestration, Composer  
[6 tracks](#)



**Andraé Crouch**  
Arranger, Choir Arrangement



**Randy Waldman**  
Arranger  
[1 track](#)

This was the Production Team.

## Production

---



**Vanessa Williams**  
Producer, Executive Producer



**Jeff Kievit**  
Producer, Design



**Universal Music**  
Current Distributor



**Robbie Kondor**  
Programming



**Mick Guzauski**  
Mixing

Show more ▾

## Release information

---

**Mercury**  
Label

**United States of America**  
Country

**E5328272**  
Catalog

Click on **David Foster**, Producer to learn more.

This will open David Foster's Landing Page.

David Foster

Play now

OVERVIEW DISCOGRAPHY COMPOSITIONS

ADULT CONTEMPORARY CLASSICAL CONTEMPORARY POP/ROCK EASY LISTENING FILM MUSIC MOVIE THEMES POP/ROCK SOFT ROCK

SOUNDTRACKS STAGE & SCREEN VOCAL MUSIC

David Walter Foster (born November 1, 1949) is a Canadian record producer, composer, arranger, and musician. He has won 16 Grammy Awards from 47 nominations. Foster's career began as a keyboardist for the pop group [Skylark](#) in the early 1970s before focusing largely on composing and

Born 1 November 1949 (aged 75)  
Victoria, British Columbia, Canada

Open the DISCOGRAPHY Tab

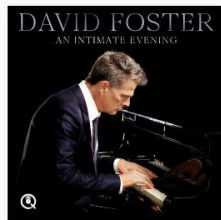
You will find a listing of all David Foster Albums available on Qobuz.

#### Main albums (9)



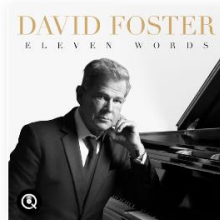
14 October 2008

Hit Man David Foster & Friends  
David Foster & Friends



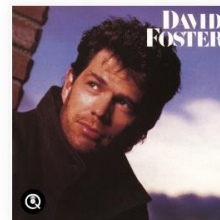
22 November 2019

An Intimate Evening (Live)  
David Foster



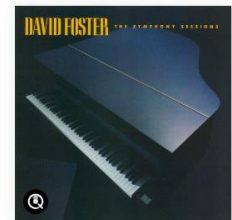
3 April 2020

Eleven Words  
David Foster



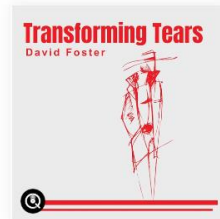
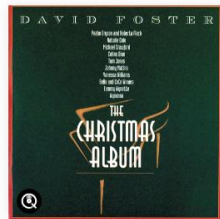
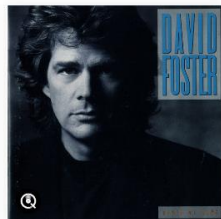
1986

David Foster  
David Foster



1988

The Symphony Sessions  
David Foster



# Learning more about ROON

Watch this full ROON walkthrough video on ROON's YouTube Channel.

<https://www.youtube.com/watch?v=q7qBMeTJWAQ>

The screenshot shows the ROON interface for the track "Symphony No. 9 in D minor ('Choral'), Op. 125". A red callout box labeled "FOCUS" points to the "Focus" filter button in the top navigation bar. Below this, a table of filter options is highlighted with a red border:

ENSEMBLES	CONDUCTORS	LABEL	PERFORMERS	FORMAT
Wiener Philharmoniker (15)	Wilhelm Furtwängler (22)	Music & Arts (17)	Elisabeth Schwarzkopf (12)	CD Quality (202)
Berliner Philharmoniker (15)	Herbert von Karajan (10)	Deutsche Grammophon (16)	Otto Edelmann (11)	
Philharmonia Orchestra (12)	Arturo Toscanini (9)	Denon Records (9)	Elisabeth Höngen (6)	
Orchester der Bayreuther Festspiele (7)	Otto Klemperer (8)	RCA (8)	Ludwig Weber (6)	
	Karl Böhm (4)	Warner Classics (8)	Gré Brouwenstijn (5)	
NBC Symphony Orchestra (7)	Bruno Walter (4)	Sony Classical (7)	Irmgard Seefried (5)	

A red arrow labeled "Apply Filters" points to the right side of the filter table. Below the filter table, two recording entries are shown:

- Released 12 February 2021**  
**Symphony No. 9 in D minor ("Choral"), Op. 125**  
PERFORMED BY: Pittsburgh Symphony Orchestra, Mendelssohn Choir of Pittsburgh  
APPEARS ON: Beethoven: Symphony No. 9 in D Minor, Op. 125 "Choral" (Live)  
CONDUCTED BY: Manfred Honeck  
PERFORMED: 6 Jun 2019 - 9 Jun 2019, Heinz Hall for the Performing Arts  
Duration: 1:02:45
- Released 14 May 1991**  
**Symphony No. 9 in D minor ("Choral"), Op. 125**  
PERFORMED BY: Chicago Symphony Orchestra, Chicago Symphony Chorus  
APPEARS ON: Beethoven: Symphony No. 9 "Choral"  
CONDUCTED BY: Georg Solti, Margaret Hillis  
FEATURING: Chicago Symphony Orchestra, Georg Solti  
PERFORMED: May 1972, Krannert Center, University Of  
Duration: 51:30

This explains the different ways you can discover new music similar to your tastes.

Watch this interview with **Enno Vandermeer**, Founder and CEO of ROON.

<https://www.youtube.com/watch?v=3xo2jogRY-s>



**Interview with Enno Vandermeer - Founder & CEO of Roon Audio - The Ultimate Audiophile Media Player**



David Hyman's Pioneers of Sonic Excellence  
167 subscribers

Subscribe

120



Share

Ask

Download



ROON was purchased by Harman which is now a part of SAMSUNG.

Here are a collection of 100 articles that will help you discover what ROON can do for you:

<https://roon.app/en/mastery>

Join the ROON Community to learn more and share your thoughts:

<https://community.roonlabs.com/>

## Summary

You need to spend only **\$300** to set up your own ROON Server.

1.

Buy these 4 items:

MiniPC

<https://www.amazon.com/Micro-Mini-PC-Computers-N5105/dp/B09Q8Z6VB7/>

\$143.99

Music Streamer

<https://www.amazon.com/FiiO-SR11-Streamer-Receiver-Multiroom/dp/B0DFCQPZQY/>

\$99.99

MicroSD Card

<https://www.amazon.com/SanDisk-Extreme-microSDXC-Memory-Adapter/dp/B09X7C2GBC>

\$41.99

USB Thumb Drive

<https://www.amazon.com/Samsung-MUF-256AB-AM-Plus-256GB/dp/B07D7PDLXC>

\$14.99

2.

Set up your ROON Account using this link.

<https://ROONlabs.com/r/4Sjl4g==>

3.

Download this ROON Linux Operating System Image File:

<https://download.ROONlabs.net/builds/ROONbox-linuxx64-nuc4-usb-factoryreset.img.gz>

4.

Download **Etcher**.

<https://etcher.balena.io/>

5.

Flash this ROON Linux Image to the USB Thumb Drive.

ROONbox-linuxx64-nuc4-usb-factoryreset.img.gz

6.

Install the ROON OS into your miniPC from the bootable USB Thumb Drive.

You need to connect a USB keyboard and a monitor during the installation process.

7.

Download and Unzip this file:

<https://johnvansickle.com/ffmpeg/builds/ffmpeg-git-amd64-static.tar.xz>

You will find a file named **ffmpeg** under this folder:

ffmpeg-git-20240629-amd64-static

8.

Open Windows Explorer and enter:

<\\192.168.50.97\data>

Copy the **ffmpeg** file into the Codecs folder:

<\\192.168.50.97\data\Codecs>

Refresh the ROON OS Web Interface. This will take care of the missing Codecs file.

<http://192.168.50.97/>

Note: Do not use https

9.

Rip your Music CDs into FLAC files using dBpoweramp.

10.

Copy your local Music Library to your SanDisk MicroSD Card.

11.

Install the ROON Remote App on your iPad.

12.

Connect your Music Streamer to your Local Area Network with a Cat5e Ethernet Cable.

13.

Download ROON for Desktop

<https://ROON.app/en/downloads>

You need Windows 10 or higher.

14.

Explore the ROON Interface.