Roon Labs Help Center

Roon Optimized Core Kit

Let's first explain what Roon OS is, and then we can talk about Roon Optimized Core Kit.

Roon OS is a custom Linux based operating system, tailored for running Roon Server and providing a best-in-class, appliance-type user experience to host the Roon Core.

Roon OS boots very quickly and integrates with the Roon suite of applications for updating, discovery, configuration, and support. It also comes with a disaster recovery mechanism .

Roon OS includes a web-based administration UI which allows users to check system status, configure network settings, start or stop services, and factory-reset the device from desktop and mobile web browsers. The Roon application also can locate Roon OS on the network and give the user a link to open this web UI in a browser.

So, what is Roon Optimized Core Kit (ROCK) then?

ROCK is a do-it-yourself build of Roon OS. To use it, you will need to buy hardware components, assemble them, and install ROCK.

This is is what ROCK offers (and what it doesn't offer):

- It is completely free ($0)
- It is an alternative to Windows/MacOS/Ubuntu/Arch/etc...
- It runs Roon (The stock Linux RoonServer to be exact), but does not come with a Roon membership. You can sign up for a free trial or purchase a Roon membership here
- It is an extremely lightweight Linux-based operating system. Much more on the scale of an embedded machine than a desktop or server operating system
- It is a turn-key image with all required pieces to make a Linux based Roon appliance without any prior knowledge of Roon or Linux
- It auto-updates in an experience similar to Roon, integrated fully into the Roon Remotes' *Settings->About* page

- OS updates will blow away any "custom" changes you may have made to the OS, so we do not recommend you try to tweak the OS
- It provides a web browser-based configuration for networking setup, factory reset, power/reboot, etc...
- It can not run additional software, nor does it support any customizations or modifications to the operating system
- It has working multichannel digital audio output support (if the hardware has a working HDMI or DisplayPort connector)

You can migrate your Roon databases over to it easily using our backup functionality . It exposes your internal storage and external storage (USB) drives over an SMB share (micro-NAS!). You can backup your storage content using whatever backup solution you use currently because the internal storage is accessible via a network share. The OS does not need to be backed up, because it can easily be reflashed at any time.

What hardware does ROCK run on?

💡 For a fully turn-key fanless system in a beautiful case, you will want the Nucleus by Roon Labs .

If you are willing to buy computer components, put it together, and install the operating system by hand, we suggest the configurations below.

ROCK For Small to Medium-Sized Libraries

We recommend the NUC10i3FNH with 4GB RAM and 64GB M.2 SSD for small to medium-sized libraries. Please note that 4GB RAM sticks and 64GB M.2 SSDs are difficult to find, and there's little price difference between the 8GB and 128GB upgrades. You can find these components on Amazon at the links below.

Component	Amazon US	Amazon UK	Amazon DE
NUC10i3FNH	View Price	View Price	Unavailable, View i7
8GB RAM	View Price	View Price	View Price
128GB M.2 SSD*	View Price	View Price	View Price

📄 If you are planning to add a non-M.2 SSD for internal storage, please note that the Intel NUC will only accept 2.5" drives with a maximum 9.5mm thickness

ROCK For Large Libraries (12k+ albums) or DSP Use

We recommend the NUC10i7FNH with 8GB RAM and 128GB (or more) M.2 SSD for large libraries (12k+ albums) or heavy DSP use.

Component	Amazon US	Amazon UK	Amazon DE
NUC10i7FNH	View Price	View Price	View Price
8GB RAM	View Price	View Price	View Price
256GB M.2 SSD*	View Price	View Price	View Price

📄 If you are planning to add a non-M.2 SSD for internal storage, please note that the Intel NUC will only accept 2.5" drives with a maximum 9.5mm thickness

How do I get the ROCK Installer?

If you are buying Nucleus by Roon Labs to run ROCK, then you will not need the installer as it comes pre-installed.

For the more do-it-yourself solutions, we are providing ROCK as a free downloadable image that you burn onto a tiny USB flash drive, and then boot the machine with it to install.

Check the ROCK Install Guide for detailed information.

More about ROCK's hardware support...

- We have worked with Intel to support its Intel NUC line of products. They are low power high performance easy to install units that work very nicely as a Roon Core Server. The models we support are:
  - NUC5i3xxx

- NUC5i5xxx
- NUC6i3SYx
- NUC6i5SYx
- NUC7i3BNx
- NUC7i5BNx
- NUC7i7BNx
- NUC7i3DNx
- NUC7i5DNx
- NUC7i7DNx
- NUC8i3BEx
- NUC8i5BEx
- NUC8i5BEx
- NUC8i7BEx
- NUC10i3FNx
- NUC10i5FNx
- NUC10i7FNx

- **Any hardware configurations other than the above are unsupported.**
  Although they may work now, they may also stop working at any time due to updates.

- **Devices must support Legacy Boot.**
  There have been reports that some NUC BIOS revisions (for example, in the JY line) removed Legacy Boot support, but these are not on the supported list above. This may change in the future, so be diligent when checking.

- **The SSD can not be used for music content.**
  If you want music content in this device, use another disk (see below about "internal storage").

- **Other important notes on hardware support:**
  - You will need most likely need to update your BIOS on these machines
  - We recommend using the onboard ethernet, but support for some USB ethernet and WiFi adapters is included. Some of the above NUC7s have built-in WiFi, which we may support, but once again, we recommend using ethernet and not assuming WiFi works here, or is an acceptable solution for Roon Core connectivity.
  - 4gb RAM minimum, 8gb should be more than you will ever need.
  - Make sure you are installing to an SSD and not a spinning disk. The NUCs we recommend have an M.2 SSD slot for just this purpose. ROCK's installer

will use a tiny bit of it for the operating system, and the rest for the Roon Database.

- The SSD can be 64GB or larger -- note that larger SSDs tend to be faster due to how the chips are laid out (after 256GB, it doesn't matter... for now). It is extremely rare you will need more than 128GB of storage on this SSD. ROCK will not use it.
- Internal storage (for music content) can be any size, and can be an SSD or a spinning disk, but note that the NUC kits tend to not support drives thicker than 15mm (not enough space inside the housing).
- Internal storage (for music content) WILL be reformatted, so don't put your music on it and expect it to work.. you will need to copy your music to it via the network share exposed, or via Roon drag/drop import
- External storage (USB) is also supported
- External storage (USB) can be most popular filesystem formats, and will not be formatted, so you can put your music on it and just plug it into the box. Filesystems supported: EXT2/3/4 VFAT/FAT32/FAT16/EXFAT NTFS HFSPLUS HFS;
- ROCK can also mount SMB shares (but not AFP or NFS)
- USB DACs are supported, as are the built-in audio devices on the machine. All audio devices are supported in exclusive mode.
- If you are using a NUC10, you will also need to disable "Secure Boot", for more information, see our BIOS Configuration Guide
- The drive must be SATA or NVME. We've seen some reports that other types of drives like the Samsung mzhpv128hdgm (M.2 slot with PCIe x4 lanes) do not work.

Which NUC do I need?

Here is an example on how to read recent (this scheme is used since the 5th generation) NUC model names:

NUC7i7BNH should be read as **NUC**, **7**, **i7**, **BN**, **H**

- **NUC** = NUC
- **7** = 7th generation
- **i7** = i7 cpu, i3 for i3, i5 for i5, i7 for i7, C for Celeron, P for Pentium
- **BN** = model name -- this name is arbitrary
- **H** = a slot for 2.5" hard drive. There is also **K** for no-hard-drive slot, and B/E for board-only and embedded models-- but those are not consumer models.

Now that you can understand those model names, and you read the requirements plus what we have tested above, you can figure out what NUCs will most likely work. You can find the models for all the NUCs here

If this is still not enough information, you should wait to see what works for other Roon members, or go with the NUC8i7BEH, as that is the best NUC that we've used.

Will ROCK run on my existing hardware?

How about this other hardware? We have only tested with the above-mentioned NUCs. It may work with other machines, but the drivers needed may not exist there. Try it out and let us know. **We can not comment on whether any different hardware will work, as we have not tested it. We will not make any guesses, educated as they might be.**

If you do manage to get it to run, that's great, but we can not guarantee it will continue to work with future builds. **Consider yourself warned.**

ROCK is great, but I want to do X Y and Z.

Please read this . It was written by a member of our community that summed up our thoughts on this very well.

https://help.roonlabs.com/portal/en/kb/articles/roon-optimized-core-kit