Crankk official guide for onboarding a Bobcat Miner 300 G285 gateway

1) Flash the CrankkOS image to the Bobcat's eMMC
2) Local Dashboard setup
3) User Dashboard setup

You can identify the **2GB Bobcat Miner 300** by examining the Serial Number located on its rear side. **The Serial Number** should start with **G285**. Alternatively, you can open the box and verify if the chip inside has **G285** written on it.

The **Bobcat G285**, when operating with its original OS, may have the capability to boot from SD card if one is inserted. To explore this option, you can attempt it by flashing the **CrankkOS image** onto an SD card and then inserting it into the Bobcat. If this approach does not yield the desired results, please proceed with the following steps.

Here are a few things you might need for this guide: T9 bit screwdriver and micro USB cable

In this guide, we will walk you through the process of flashing the **CrankkOS** image onto your **2GB Bobcat Miner 300 G285** using a Windows OS PC. Please note that this guide is also applicable to Linux and macOS systems. We will use '**Bobcat Miner**' to refer to the gateway.

1) Flash the CrankkOS image to the Bobcat's eMMC

1. Download the CrankkOS image.
Please follow this **link** to download the **crankkos-bobcatrk3566.img.xz image**.

This is an exclusive image only for **2GB Bobcat Miner 300** versions **G285/G290/G295**.

Once the download is complete, extract the contents of

the downloaded image file.

When you flash your device with **CrankkOS**, it will essentially wipe out the original operating system as well as all current configurations, user data, and so on. There is no straightforward method to back up the existing OS and data, so please exercise caution before proceeding.

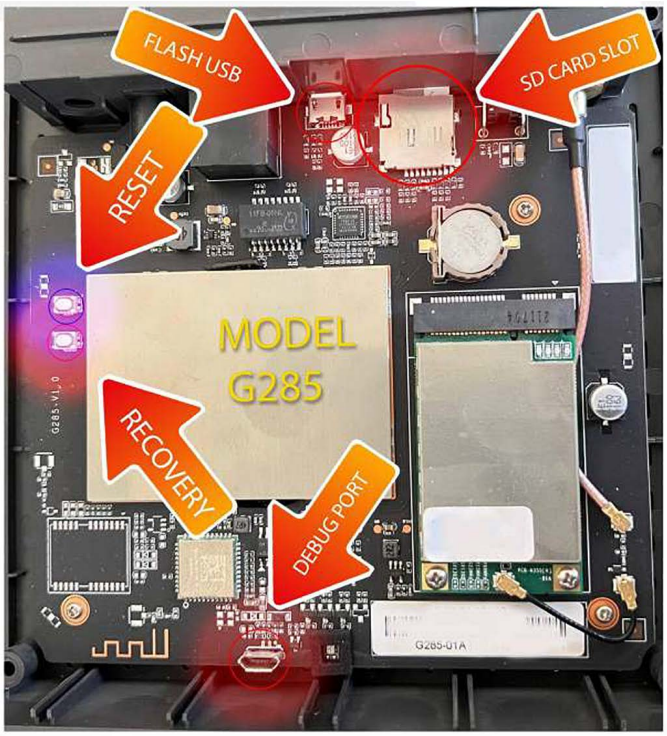
Please note that the flashing process of the **Bobcat Miner** with the CrankkOS image does not require an active network connection.

2. Download and Install the Rockchip Flashing Tools.
For this step there is no need to connect your Bobcat device to your PC yet.
Rockchip Flashing Tools are available for **Windows/Linux/ MAC OS**.

For Windows users, download the latest recommended version of the tools. Follow the instructions provided to install the tools. Make sure to install **RKDriverAssistant** as the first step.
Don't forget to restart your PC.

3. Open the Bobcat Miner.
Begin by removing the four bolts on the back of the Bobcat using a T9 bit screwdriver.
Take note of the locations of the two buttons on the left side of the board – **Recovery** and **Reset**.

Do **NOT** press anything yet, but we will need them for the next few steps.



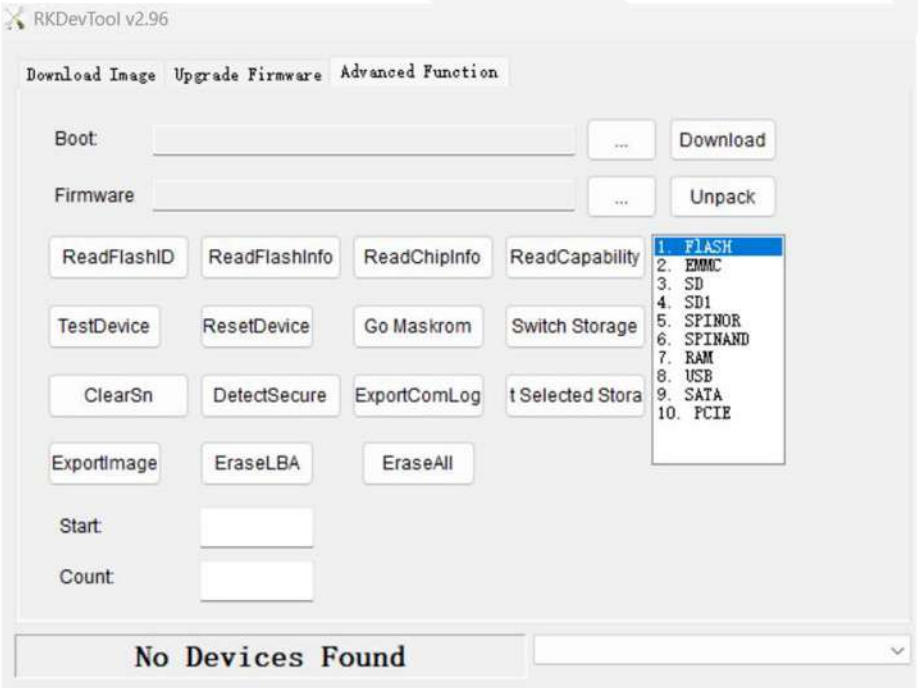
4. Connect the Bobcat to your PC via micro USB cable
Use a micro USB cable to connect the Bobcat to your PC. The Bobcat features two micro USB connectors; use the one that's accessible from the back panel ,labeled **USB_OTG** on the PCB. (**Flash USB on the image above**)

Subsequently, power the **Bobcat Miner** using its standard power adapter while it remains connected to the PC via the **micro USB** cable. Observe the presence of blue and green lights, indicating successful loading of the Bobcat.

5. Flash the unzipped CrankkOS image to the eMMC
Begin by downloading the **bootloader**, an essential component for the later stages of this guide.

Run **RKDevTool.exe** to start the flashing tools.
Our goal here is to erase the flash memory and then install the **CrankkOS** image.

This is how it’s going to look the tool interface, before the procedure:



Locate the **Recovery** and **Reset** buttons. (For G285 models, these buttons will be positioned different than G290/295.)

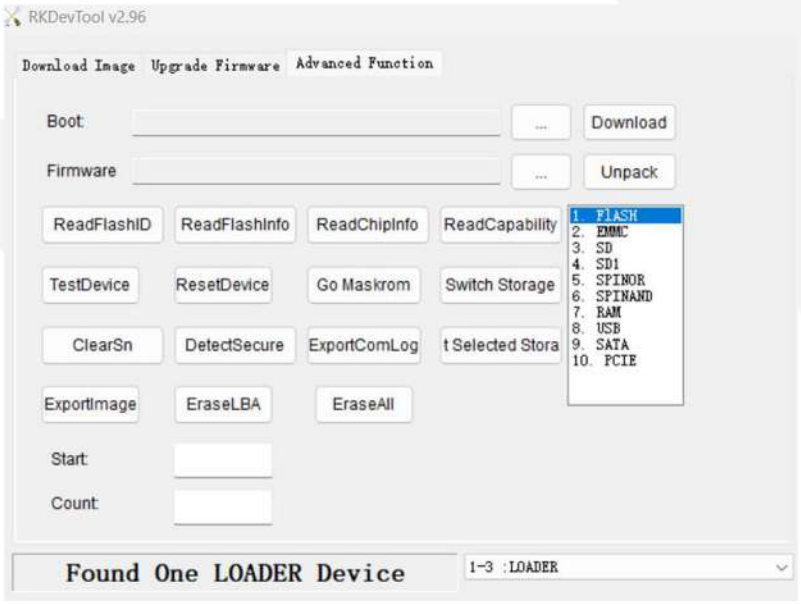
Securely grip the **Bobcat** box to prevent any accidental slipping while pressing the buttons.

Perform the following button actions:

- Press and hold the **Recovery** button.
- Then quickly press and release the **Reset** button.
- Release the **Recovery** button after about 1 second.

If the procedure is successful, you will receive a message indicating **Found One Loader Device. If this message does not appear, change the micro USB cable with another one**.

Additionally, the green light will turn off.



Navigate to **Advanced Function** and select **Flash**.

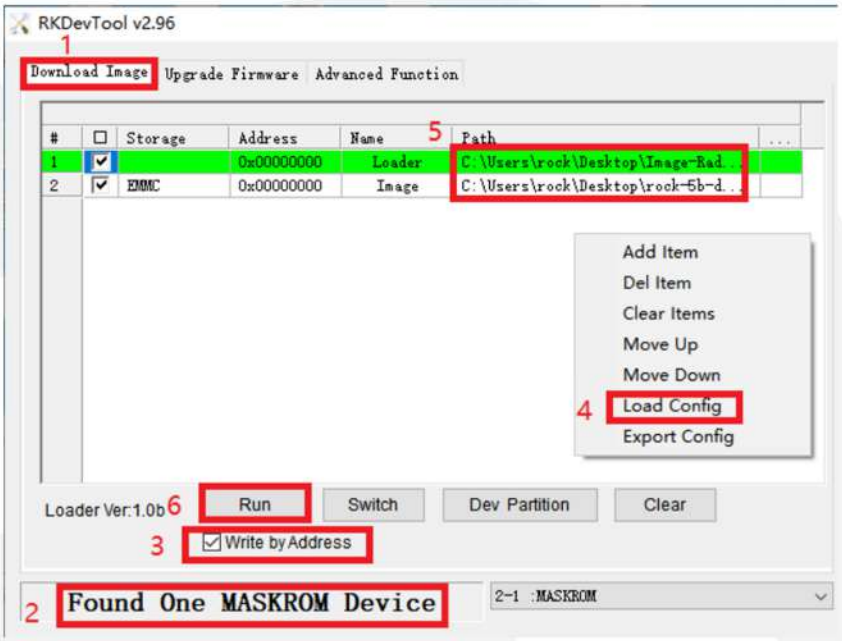
Click on **EraseAll** button and wait until its 100% completed.

Once finished, swiftly press the **Reset** button.
This action will initiate a restart of the gateway, which might take a few moments.
You can click on TestDevice to check if your board is ready to be flashed.
“Test Device Success” message should appear.

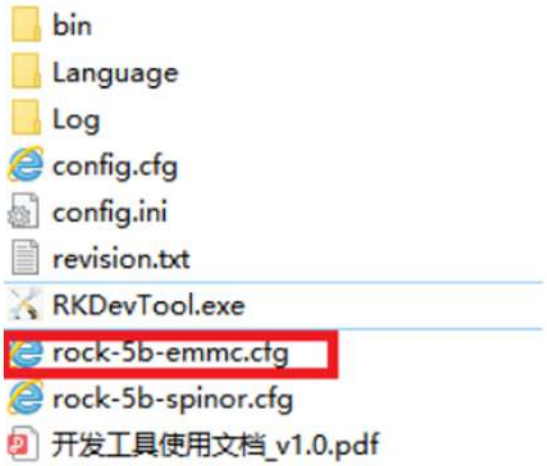
6. Flash the CrankkOS image

After the reboot is finalized, reopen **RKDevTool.exe**. (don't worry that the blue light is off that's normal)

If, however, you do not see the message **Found one Maskrom Device**, disconnect the **Bobcat Miner** from power and then reconnect it.

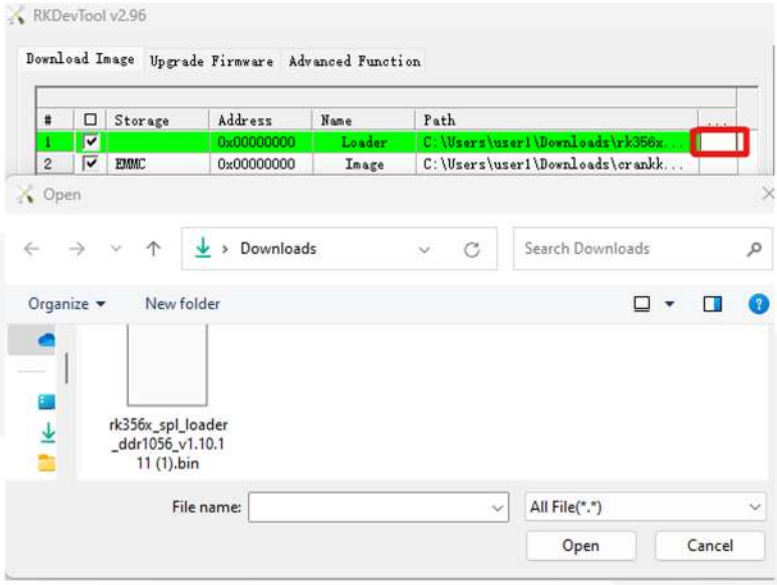


1. Select **Download image** tab
2. Make sure you are in **Maskrom mode**
3. Enable **Write by Address**
4. Right-click in the blank area of the list and select **Load configuration file**.



5. Now we have to assign the path of the **boot loader** and **CrankkOS image**

- Navigate to the download location of the boot loader by selecting the empty box next to **Path section**



-Repeat the same process for the CrankkOS image.

6. Double-check all the settings, ensuring everything is in order. Confirm that the Address is set to 0, and then press **Run**.

Upon completion of the flashing process, disconnect the **micro USB** cable and power adapter. Reassemble the gateway, attaching the antenna and LAN cable. Start the **Bobcat Miner** normally.

If, for any reason, the flashing procedure fails, you can begin again from **Step 5**.

2) Local Dashboard setup

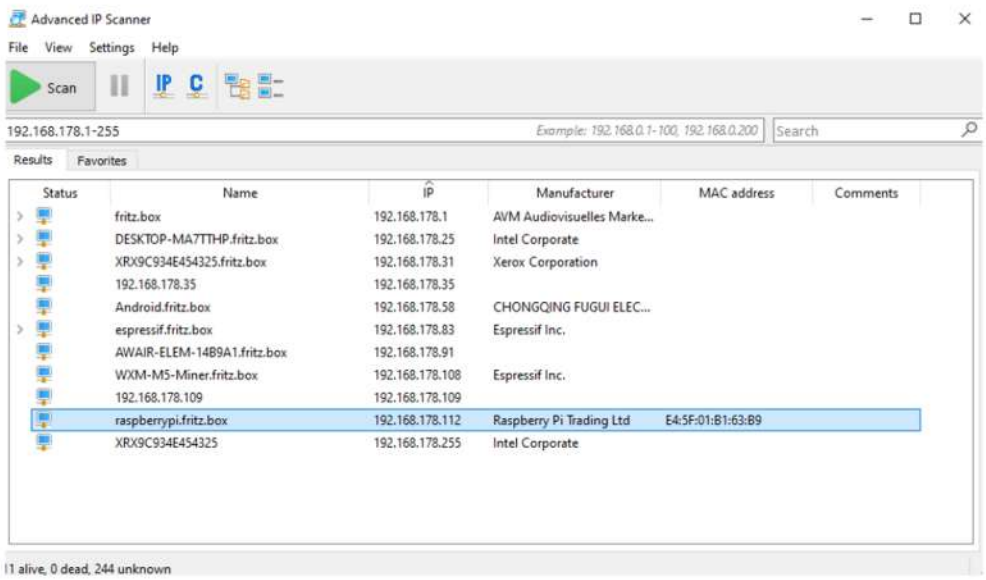
7. Log in to the Local Dashboard.
We have automated the process and you do **NOT** need to download the **Crankk Installer** anymore.

Instead, just log in to the **Local Dashboard**.

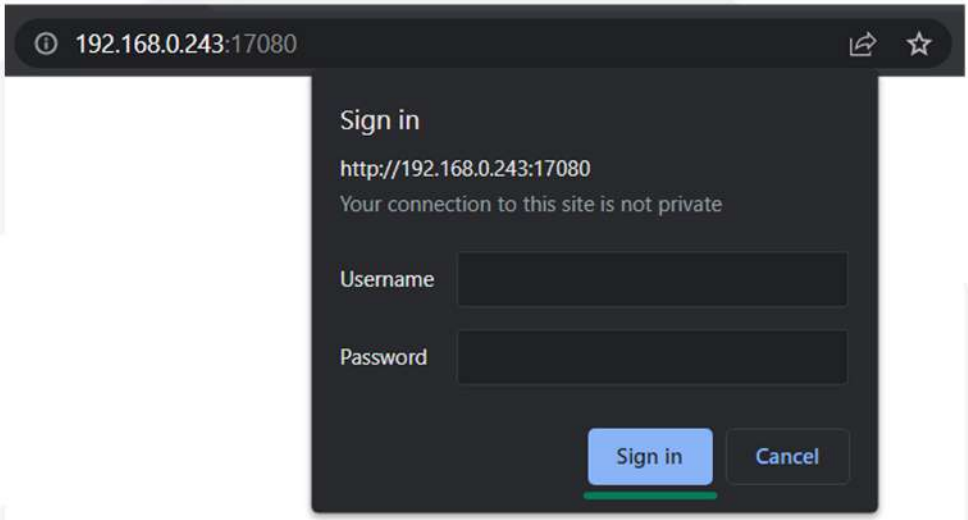
If you have any VPN enabled on your PC, please turn it off.

Now check your router to find the **gateway IP address**.

If you are unsure how to do this, you can use free tools like **Advanced IP Scanner** to help you out. Check the **MAC address** of your gateway to find the correct IP address.



Once you have the LAN IP address of your gateway, open a new browser tab from a PC on the same network and paste the IP followed by **:17080**
http://192.168.0.243**:17080**
When logging in for the first time, you do not need to enter any credentials, just press **Sign in**.

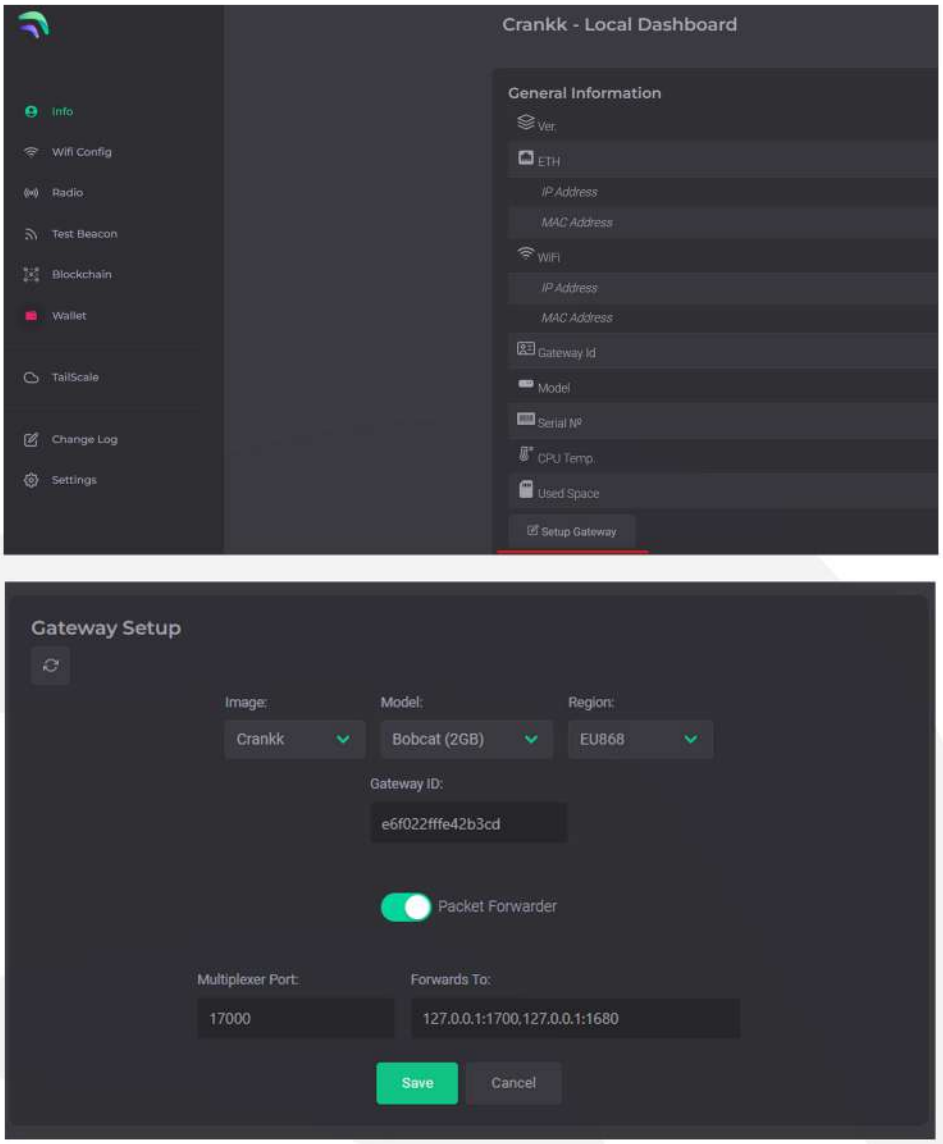


After setting up your gateway, next time you can log in with the following credentials:

• Username: **admin**

• Password: **the last 6 symbols of the gateway's MAC address (e.g. B163B9)**
Please note that you can change the password in the **Settings** tab.

8. Set up the gateway.
Go to the **Info** tab > **Setup Gateway**



Copy your **Gateway ID**, as we will need it later.

Select the **Image** that is installed on your gateway (Crankk / Helium / Nebra), **Model** and **Region*** (EU868 / AU915 / US915).

For **Bobcat Miner** gateways, only the Crankk image is available at the moment.

Turn on the **Packet Forwarder**.

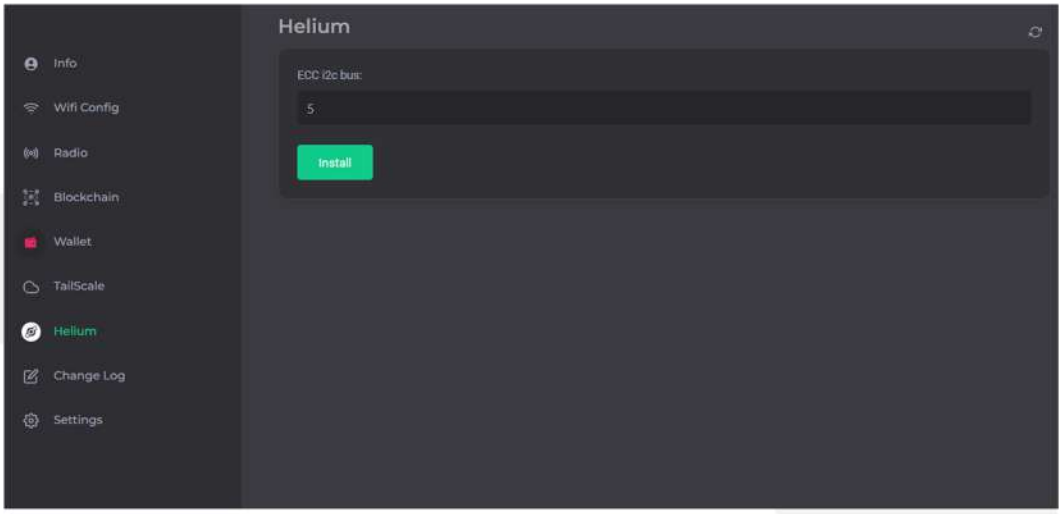
If you are currently mining or planning to mine Helium, leave the **Forwards to** box unchanged as shown in the screenshot.

If you don't wish to mine Helium, leave only **127.0.0.1:1700**

Hit **Save**.

Your gateway will restart automatically. Please wait a few minutes while it loads.

9. Double mining.
If you want to participate in Double mining, you can install Helium from here:



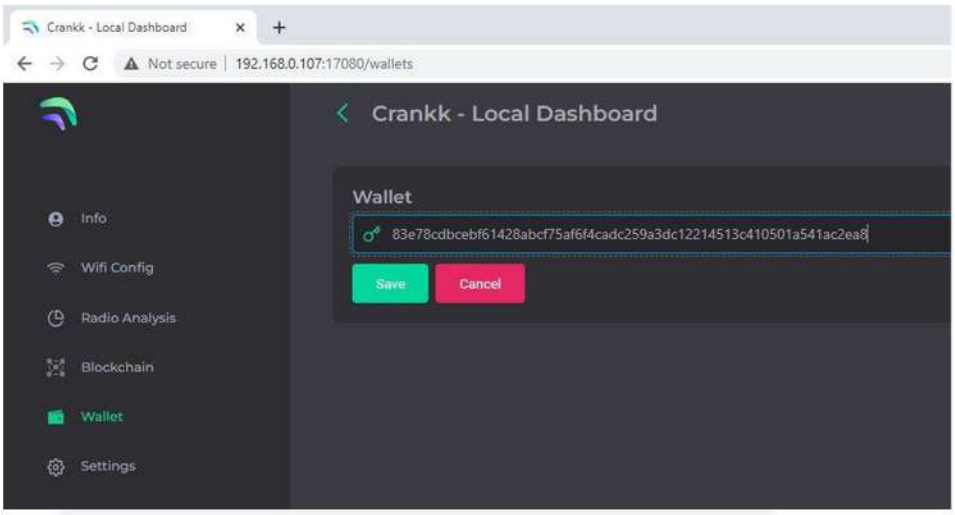
10. Import your secret key.
Hint: If you don't have your secret key saved, you can go to the **User Dashboard** > **Wallets** > find the correct wallet > use the three dots to reveal the secret key.

Navigate to the **Wallet** section in the **Local Dashboard** and enter your **secret key**, keeping the following in mind:

• Please ensure that you copy and paste the **secret key** exactly as it is, without any spaces or other symbols

• Please double-check that it is the correct **secret key** and that it does not belong to another gateway

• Please also note that your **secret key** is different from your **wallet address/public key** starting with k:



Hit **Save**.

If you have entered the correct secret key, then you will see your **k: wallet address** displayed in the **Wallet** field.

Please note that re-flashing already onboarded Bobcat G285 with the CrankkOS image may result in creating a new MAC address and new gateway ID.

We advise against reinstalling the image. However, if you must do so, please use your **old gateway ID** (which can be found in the **User Dashboard**) when setting it up and contact the **Crankk Technical Support** team to reset the connection to the **ChirpStack server**.

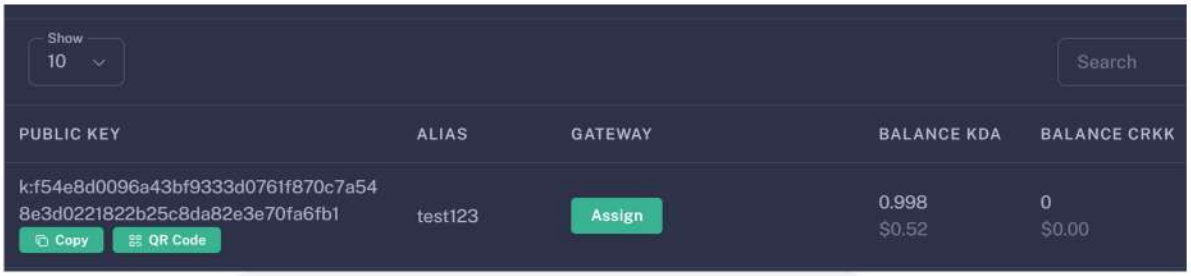
We are actively working to resolve this issue during the beta testing period.

3) User Dashboard setup

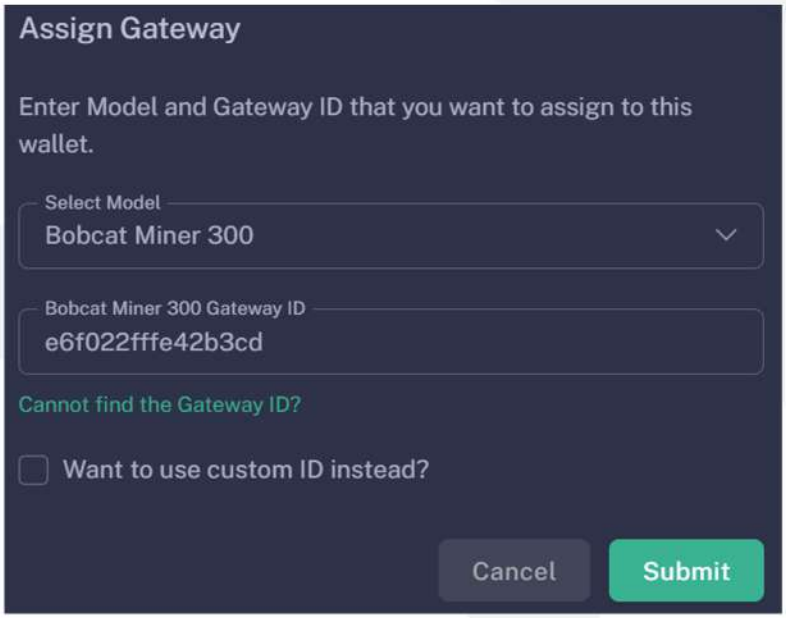
11. Assign your gateway ID to a wallet in the User Dashboard.
Visit **User Dashboard** and sign in into your account.

Navigate to the **Wallets** section and select the wallet that you want to use for your software license activation.

Assign your gateway ID to the chosen wallet by clicking on the **Assign** button. If you don't see such a button, it means you haven't purchased a software license for this wallet.



Select your gateway **Model**, copy and paste your **Gateway ID** (please double-check that it is correct) and hit the **Submit** button.

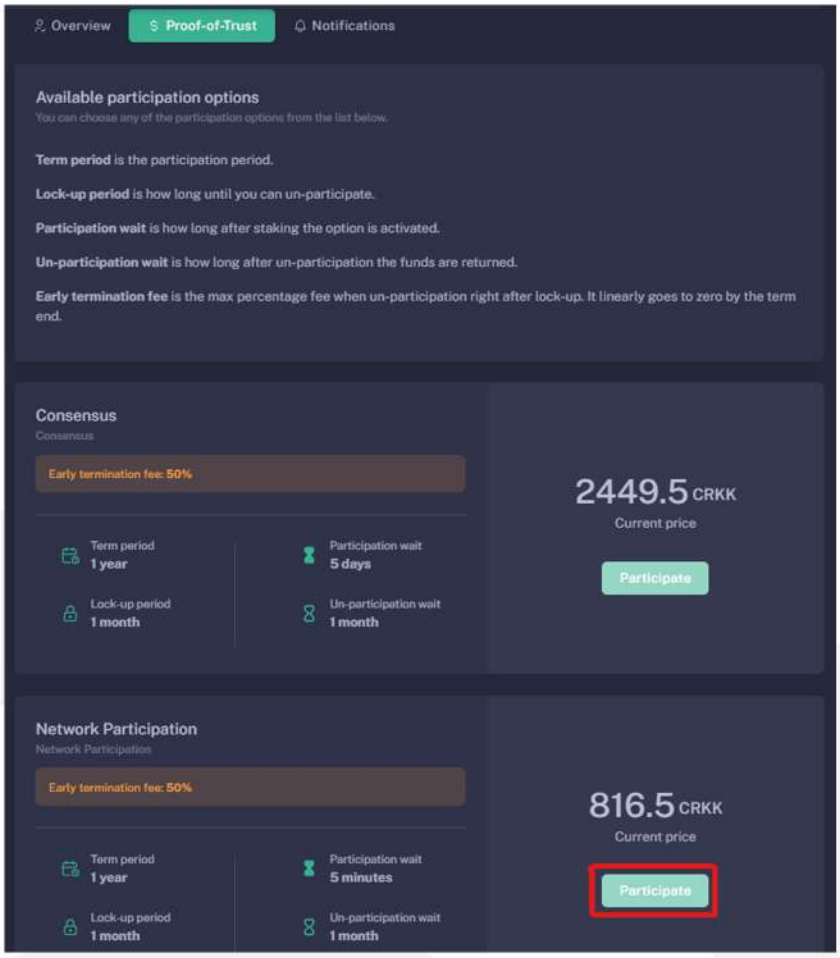


Please wait a few minutes to allow the changes to sync to the blockchain.

12. Participation in Proof-of-Trust

Staking is a mandatory requirement for all gateways onboarded into Crankk, in order to receive rewards. It requires staking $100 worth of CRKK tokens.

Those funds remain yours, and you can fully withdraw them after period of 1 year.

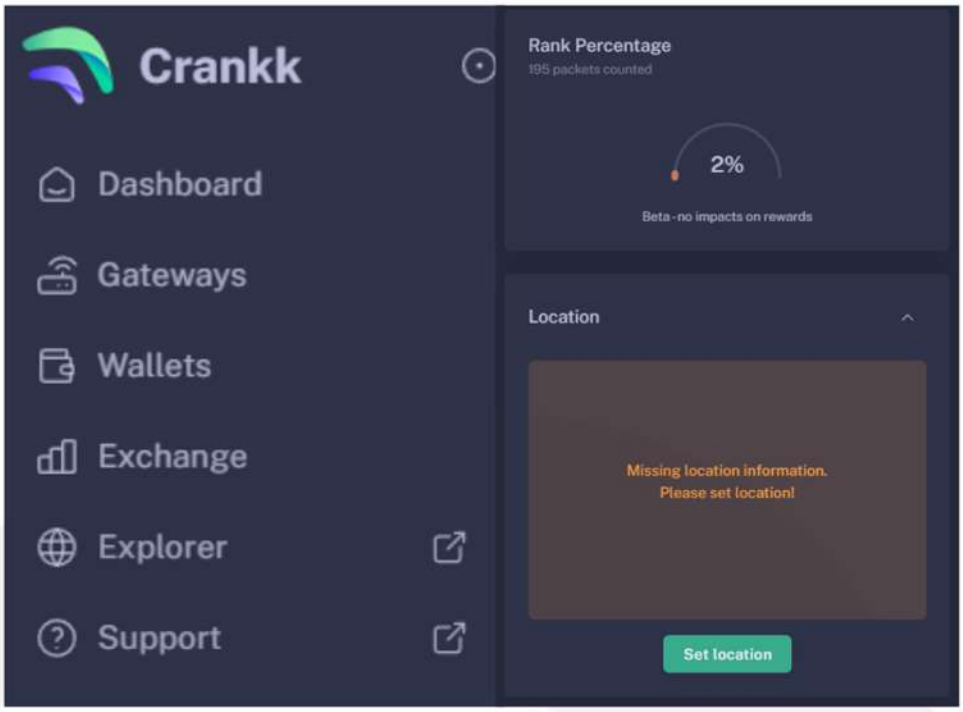


To complete this process:

• Log in to the **User Dashboard**.
• Navigate to **Gateways** and select your specific gateway.
• Click on **Proof-of-Trust**.
• Next to the "Network Participation" tab, you will find the current amount of CRKK tokens required for staking. Simply press the green **Participate** button.

It's important to note that the staking value remains constant at $100. The only variable is the quantity of CRKK tokens that need to be staked. If you lack the necessary tokens for staking, our DEX offers the option to exchange KDA coins for CRKK tokens.

13. Set your gateway location



To set your gateway location you need to:

- Navigate to your gateway in the User Dashboard.
- Scroll down below the **Rank Percentage** section until you find the **Location** tab.
- Unlock your wallet by entering the correct password.
- Click on **Set Location**.
- Zoom out using the scroll wheel on your mouse.
- Select the desired gateway location.
- Click **Submit**.

Congratulations! You have successfully onboarded your **Bobcat Miner** gateway on Crankk!

Troubleshooting Guidelines

If your device isn't recognized by the flashing tool, follow these steps:

- Repeat the initial steps involving the "RECOVERY" button.
- Ensure you are using a high-quality micro USB cable; some cables may only have power wires connected.

• Check your unit's board for two micro USB connectors; use the one labeled as "FLASH USB" in the provided picture.
• Make sure there is no SD card plugged into the device.
• Verify that the device is powered on.
• If the issue persists after trying the above methods, consider attempting the Force Maskrom Mode as described below.
• Device Appears in Maskrom Mode Instead of Loader Mode

If your device enters Maskrom mode instead of Loader mode, proceed directly to step 6.

Error Message: "Test Device Quit, Creating Comm Object Failed!" or Similar

Ensure you run the rkdeveloptool commands with elevated privileges, either as "sudo" or as the root user.

Successful Flashing, but OS Fails to Boot

Confirm that you have properly extracted the OS image before initiating the flashing process.

Forcing Maskrom Mode

To flash a raw OS image, it's necessary to place your device in **Maskrom mode**. The previously mentioned method is effective because it erases the flash, prompting the device to automatically switch to **Maskrom mode** when no bootable option is detected.

In cases where you cannot reach the point of erasing the flash, you can temporarily disable the flash chip by locating the pad marked as "FLASH DISABLE" . Then, short-circuit it to the ground using a wire, preferably connected to a sharp metallic tool.

** Crankk currently supports the following frequencies: EU868 MHz, AU915 MHz and US915 MHz. It is essential to ensure that any hardware purchased from a third-party company for use with Crankk operates on the correct frequency for your region of residence. Crankk Inc. assumes no responsibility for any issues arising from the use of hardware with an incorrect frequency. It is the responsibility of the user to select the appropriate frequency for their region of residence.*

Please note that any modifications, updates or restrictions made by the gateway manufacturer that may impact the performance or functionality of the gateway on the Crankk network are beyond the control and responsibility of Crankk Inc. Users are advised to check compatibility and seek assistance from the gateway manufacturer for any gateway-related issues.