

NiceHash OS v2 - User Guide

The new NHOS v2 is still in **Alpha**, bugs are expected. If you find any bug, please report it to our bug report form found [here](#).

Index

What is NiceHash OS v2?	1
NHOS v2 Features:	1
How to set up NHOS v2?	1
NHOS v2 Requirements:	1
Step 1: Flashing the NHOS v2 image on the USB drive	1
Step 2: Configure the configuration.json file.	2
Basic Configuration	3
SSH Configuration	3
WiFi Configuration	3
Step 3: Running NHOS v2 on your mining rig	4
Rig Manager - Optimize Feature Guide	5
How do the different Optimize Menus work?	6
The Selection Menu	6
The Overclocking Menu	6
The Fan Management Menu	7
Extra Parameters (ELPs) Menu	7
Bundle Manager	8
How to tune your GPU for mining with Rig Manager?	9
How to Overclock?	9
What are Profiles and how to set them up?	9
What are Bundles and how to set them up?	10
Additional Notes & Known Bugs	12
How to report bugs?	12

What is NiceHash OS v2?

NiceHash OS or **NHOS** is a Linux-based operating system for cryptocurrency mining built by NiceHash. **NHOS v2** is a brand new version of our operating system based on Ubuntu.

NHOS v2 Features:

- CPU Mining
- GPU (NVIDIA & AMD) Mining
- Most popular mining algorithms supported by NiceHash
- Remote Overclocking
- Automatic Profit Switching
- Automatic Overclock Switching (Bundles & Profiles)

How to set up NHOS v2?

NHOS v2 Requirements:

The new NHOS v2 can be installed in a similar fashion to NHOS v1. Below, you will find a list with all the prerequisites to install NHOS v2.

- USB drive with at least 16GB.
- An image of NHOS v2 found on our [Download Center](#).
- A PC with flashing software, like the [NiceHash Flash Tool](#), [BalenaEtcher](#) or [Rufus](#).
- A mining system with at least 4GB of RAM, 8GB is recommended.

Step 1: Flashing the NHOS v2 image on the USB drive

To use NHOS v2, you will need to flash an image of NHOS v2 on your USB drive. To do this, you can use our [Flash Tool](#) or use a 3rd party tool like [BalenaEtcher](#) or [Rufus](#). Watch our [Flash Tool video guide](#) or follow these steps to successfully flash the image on your USB drive:

1. Download and install your favorite flashing software (eg. BalenaEtcher or Rufus).
2. Download the NHOS v2 image found on our official [Discord Server](#).
3. Plug in the empty USB drive on your PC.
4. Run the flashing software.
5. Select the image of NHOS v2 previously downloaded.
6. Select the USB drive where you want to install NHOS v2.

Warning: All data on the selected drive will be erased. Make sure you select the correct drive.

7. Start the flashing process.

*Note: This process may take several minutes. Do **not** remove the USB drive until completed.*

Step 2: Configure the configuration.json file.

Once the image has successfully finished flashing to the USB drive, the USB may be automatically ejected from your computer. Remove the USB drive from your PC and plug it back in.

You should now see a NHOS partition/device on your File Explorer (Windows) or Finder (MacOS). Open this device, and you should see a **configuration.json** file.

Open the **configuration.json** file with your favorite text or code editor, like Notepad. The file should have the following formatting:

```
{
  "miner": {
    "mining_address": "",
    "worker_name": ""
  },
  "system": {
    "user": {
      "password": "",
      "authorized_keys": [
        ""
      ]
    }
  }
}
```

mining_address - is your [Mining Address](#) found inside the NiceHash Mining platform. This field is mandatory.

worker_name - is your optional worker name.

Basic Configuration

In order to start using NHOS v2, you only need to enter the [Mining Address](#) of your NiceHash account. Optionally, you can define a worker name for your rig. The worker name must contain only English letters (a-Z), numbers (0-9) and must not be longer than 15 characters.

The file must follow the standard **JSON** format, so make sure to include your mining address and worker name between “quotes”. Below is an example of a working configuration.json file. Change the *mining_address* to your own address!

```
{
  "miner": {
    "mining_address": "34BMaDrcaQH8Jp6WKFnxZ17fVdqTUqF15G",
    "worker_name": "Worker1"
  },
  "system": {
    "user": {
      "password": "",
      "authorized_keys": [
        ""
      ]
    }
  }
}
```

Once you are done, **Save the changes** made to the file before proceeding, and **eject the USB drive** from the PC.

SSH Configuration

To enable SSH, you must provide a password for the system. Define your secure password on the *password* field on the configuration.json file. When connecting, use **nhos** as the username.

```
"password": "MySSHPassword",
```

Note that SSH connection only works on a local network. If you want to access the rig from outside the local network you must set up port forwarding and other requirements to access the rig on another network.

WiFi Configuration

NHOS v2 is capable of connecting to WiFi networks if your rig has the required hardware. If your motherboard does not have WiFi built-in, you may use a USB WiFi dongle.

To set up the WiFi configuration, you must add the *network* configuration to the configuration.json file, under the *system* settings. On the *wifi* settings, you must define the

SSID and password of your wireless network. Note that the SSID and password must exactly match the name of your network, otherwise NHOS will not connect.

If you are having trouble connecting to WiFi, it might mean that your dongle or network adapter is not currently supported. If this is the case, please contact our support team.

Below is an example of the NHOS v2 configuration.json file with the WiFi configuration for a network called *MyWiFiName* and with the password *MyWiFiPassword*. Remember to change the *mining_address* to your own address!

```
{
  "miner": {
    "mining_address": "34BMaDrcaQH8Jp6WKFnxZ17fVdqTUqF15G",
    "worker_name": "Worker1"
  },
  "system": {
    "user": {
      "password": "MySSHPassword",
      "authorized_keys": [
        ""
      ]
    },
  },
  "network": {
    "hostname": "nhos",
    "wifi": {
      "ssid": "MyWiFiName",
      "password": "MyWiFiPassword"
    }
  }
}
```

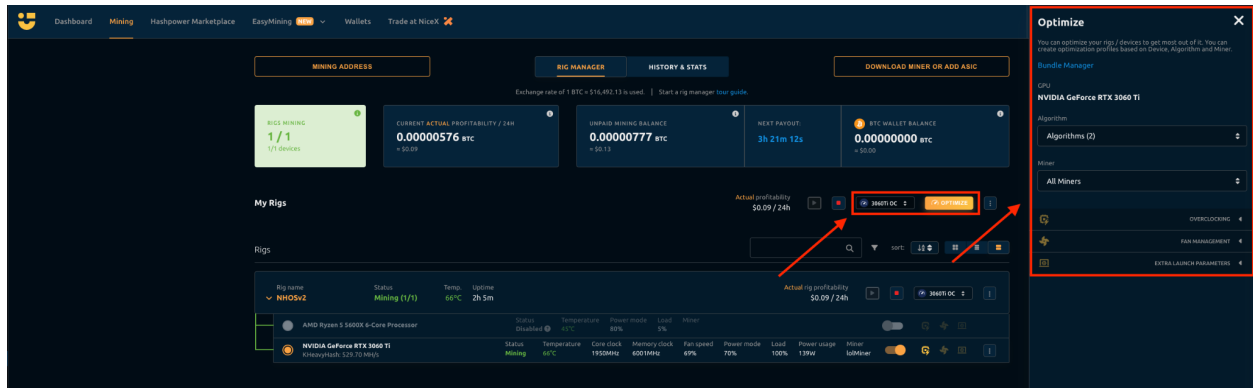
Step 3: Running NHOS v2 on your mining rig

Plug in the USB drive on your mining rig. If there are no other bootable drives on the system, NHOS should boot automatically.

If this is not the case, access your motherboard BIOS settings by pressing the DEL, or the corresponding key for your motherboard. Once on the BIOS, locate the BOOT menu options. You might need to go into advanced mode to see this (press F7 in some motherboards).

On the BOOT menu, make sure that you USB drive is set as Boot Option #1. Then, save the changes and restart your rig. You should now boot into NHOS v2.

Rig Manager - Optimize Feature Guide



NHOS v2 is controlled via Rig Manager. You can now enable and disable miners/algorithms and tune your rig for mining with the new **Optimize** feature. With it, you are able to set **overclocks, fan profiles** and even add **Extra Parameters!**

You can create different profiles for different types of hardware and settings, and combine them in bundles. For example, you can make a bundle with all the OC, and Fan profiles for the devices in your rig.

To access the Bundle Manager, you can click on the Bundle Manager link at the top of the Optimize side menu, or click on the 3 vertical dots at the right of the Optimize button.

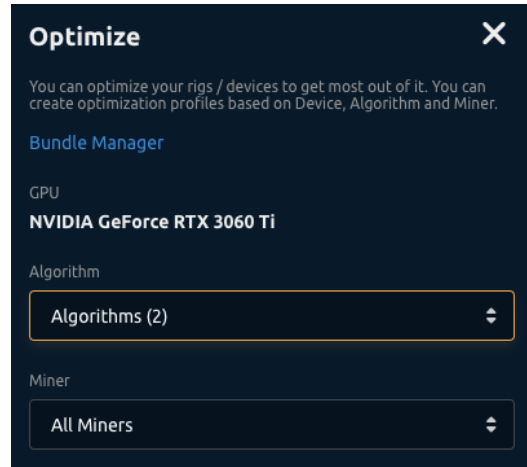
How do the different Optimize Menus work?

The Selection Menu

When you click on the **Optimize** button, a side menu will appear. At the top, it will indicate the selected device.

There is an Algorithm field and a Miner field. Here you can select the combination algorithm(s) and miner plugin(s) that you want your settings to apply to.

For example, if you want to create an overclocking profile that has the same OC settings for both the ETCHash and DaggerHashimoto algorithms, you can select these two on the Algorithms field. If you want this profile to apply to all miner plugins, select "All Miners".

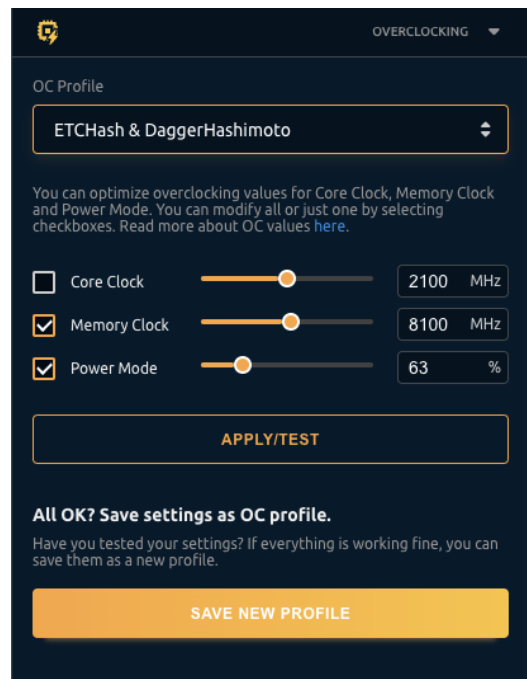


The Overclocking Menu

The Overclocking menu allows you to apply overlocks to the selected device. You can do so by defining the absolute values for core and memory clocks and TDP%.

You can apply these changes to the rig by clicking the **Apply/Test** button. Once you do so, your GPU will be under **TESTING** mode until you stop the testing. The testing mode ensures that the settings are reset if the GPU or rig crashes.

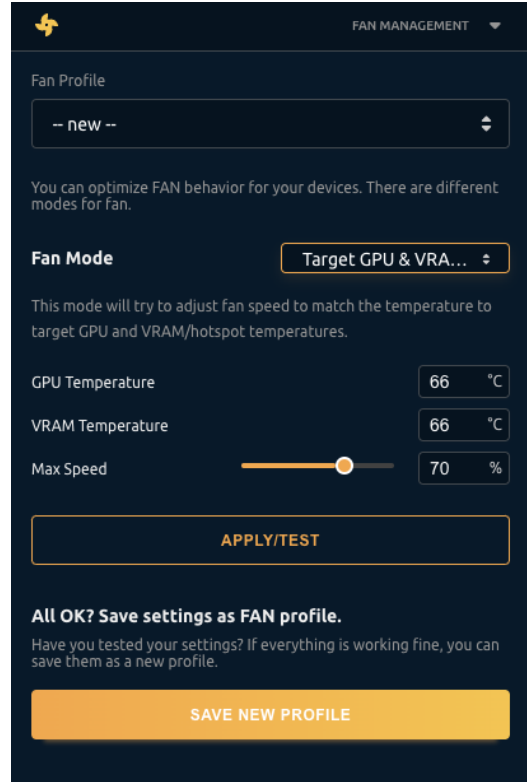
When you find a stable OC, you can save it as a new profile that you can later apply. When you save a new profile, make sure that you select the correct algorithms and mining plugins you want to use with these OC settings.



The Fan Management Menu

The Fan Management menu allows you to apply a fan profile to the selected device. You can select from different fan modes and modify those modes further.

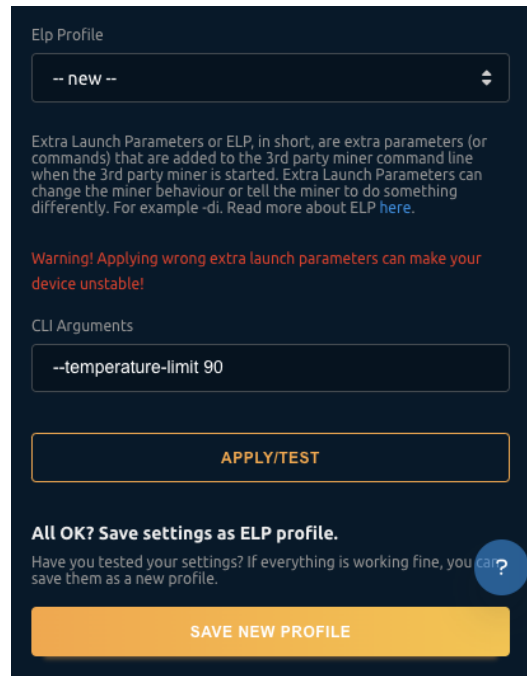
You can apply the new fan mode by clicking on the **Apply/Test** button. If you are happy with the fan profile, you can save it as a new profile. You may want to make the fan profile to work with a specific algorithm (like KAWPOW), or you might want to apply it for all algorithms. Make your selection at the top of the Optimize menu.



Extra Parameters (ELPs) Menu

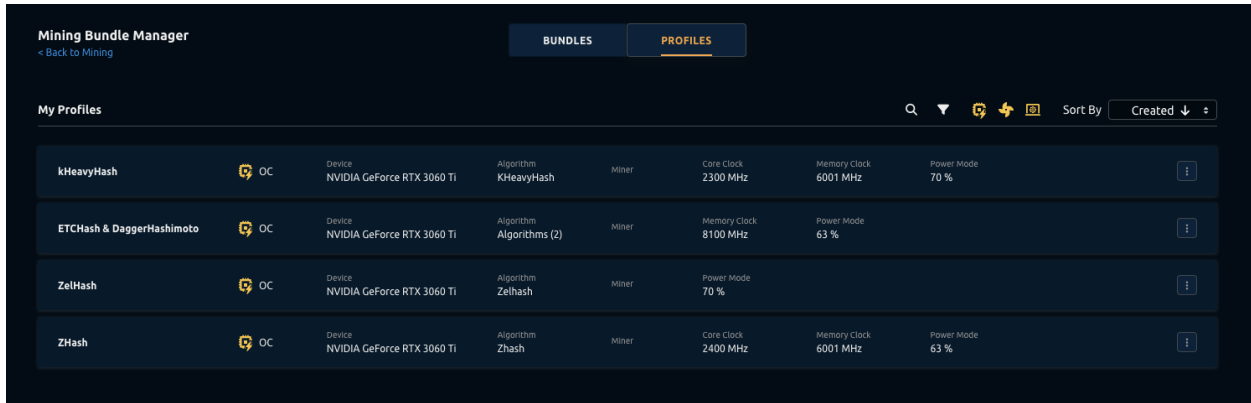
The Extra Parameters menu allows you to send Command Line Arguments to the miner plugin(s) used by the selected device. You can learn more about ELPs [here](#).

Just like with other Profiles, ELP profiles can also be specific for a miner and algorithm. In this case, you will most likely want to define ELPs for a specific miner plugin, as ELPs are usually not compatible across different plugins.

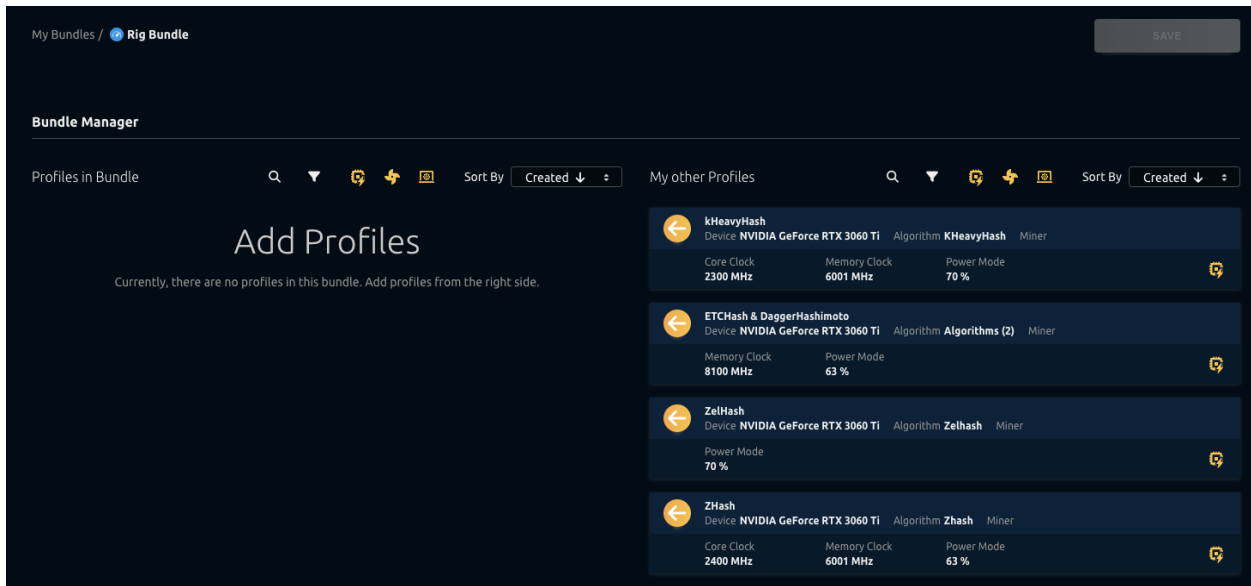


Bundle Manager

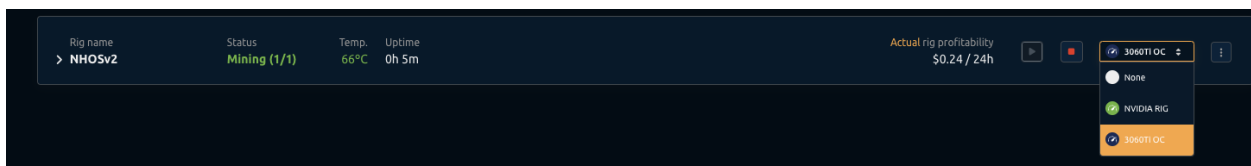
In Bundle Manager you will be able to find all your profiles and you will be able to combine them into a bundle that you can apply to your rigs.



When creating a new bundle, you will be able to choose the profiles you want to include. We recommend including all the created profiles for the different GPU models you have on that rig. You can then apply different bundles to different rigs.



You can sort by profile type (OC, FAN, ELP) and also by device and algorithm. Once you create a Bundle, you can apply it to your rig by selecting it on Rig Manager. Now when the miner switches to a different algorithm, the profiles on the bundle that match the algorithm and miner will be applied.



How to tune your GPU for mining with Rig Manager?

New Rig Manager that comes with the new NHOS release features simple overclocking called **TEST** which is used for simple, one-fits-all overclocks, and advanced **profiles & bundles** setup where you can set overclocks based on the algorithm, miner and GPU.

How to Overclock?

When creating new OC profiles, we recommend **enabling only a single miner plugin and algorithm**. Overclock settings will vary per algorithm, but will usually be stable across mining plugins, so working with only one at a time will make this process much easier.

First, click on the **Optimize** button. A menu will show up on the right side of the screen and you will now be able to select the devices to apply overclocks to. Once you select your GPU by clicking on the circle next to its name, the Optimize menu will show you more options.

You can then change the core and memory clocks for the selected device using the Overclocking menu and setting it by using the **APPLY/TEST** option.

Once the stable OC settings are found, you should create profiles that will vary from each other. You can then combine multiple profiles into a bundle which is then applied to a rig.

Example: Profile1 will be used on Autolykos algorithm while Profile2 will be used on KawPow algorithm.

Note: If rig is restarted while TEST is being active, the overclocks will be reset to default. This is to prevent rig crash loops due to unstable overclock settings.

What are Profiles and how to set them up?

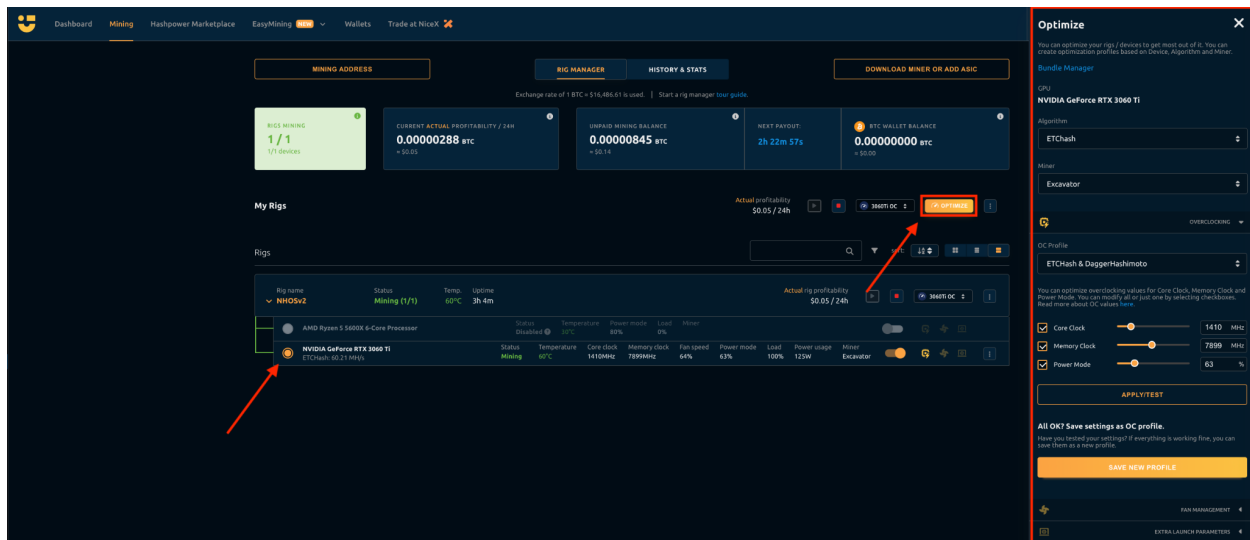
Profiles are used to prepare a set of instructions for your GPU. There are three types of profiles.

- **Overclocking Profile** - Is used to set core and memory clock on certain **GPU, algorithm** and **miner** (plugin). Note that each profile can support multiple GPUs and miners.
- **Fan Profile** - Is used to set fan profiles.
- **Extra Parameter Profile** - Is used to set extra commands when starting up the miners (plugins).

To create a profile, follow these steps:

1. Click on the **Optimize** button in the top right corner.
2. **Select a GPU** you would like to prepare a profile for (you can only create profiles for one GPU at the time).
3. **Select what Algorithms and Miners** you want to prepare this profile for.
4. Input Power Mode, Core and Memory clocks and click **Apply/Test**.
5. Once you are confident with the settings, click on the **SAVE NEW PROFILE**.

You can create Fan and Extra Parameter profiles in a similar fashion.

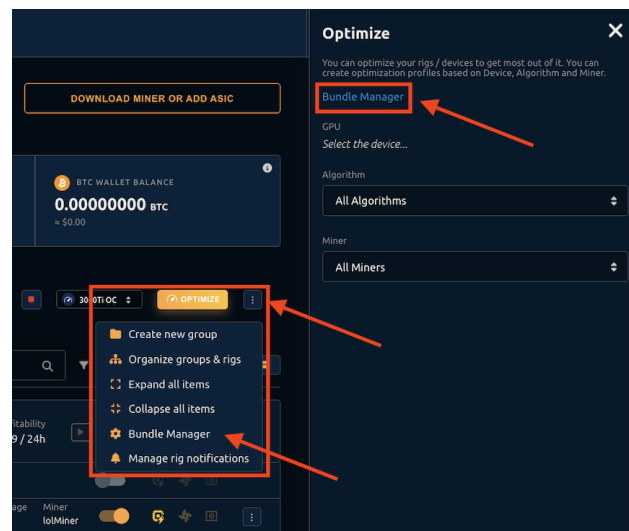


What are Bundles and how to set them up?

Bundles are sets of profiles. You can combine multiple profiles in one big Bundle that has all the OC, Fan and ELP settings for your rig.

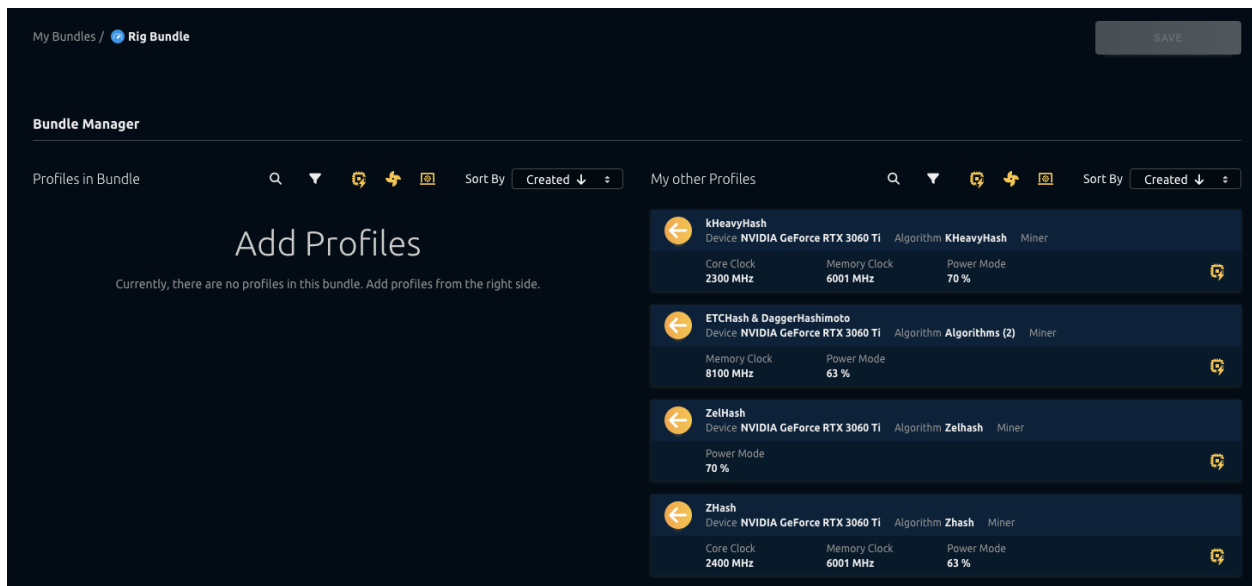
You may apply this Bundle to your rig, and NHOS v2 will automatically switch between OC profiles when switching algorithms. It will do this based on the Algorithm and Miner defined on each profile.

To set up a Bundle, you must first create one or more Profiles. After creating profiles, visit the **Bundle Manager** page. You can navigate to it by clicking on the Bundle Manager link at the top of the Optimize side menu, or click on the 3 vertical dots at the right of the Optimize button.



To create a Bundle, follow these steps:

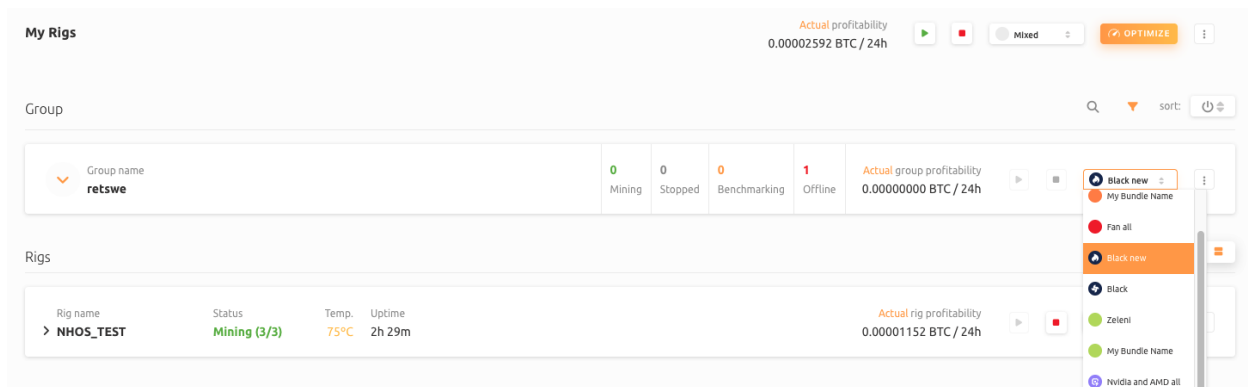
1. First, click on the **OPTIMIZE** button in the Rig Manager.
2. Then click on **Bundle Manager**.
3. Once you are in the Bundles page, click on the **NEW BUNDLE** button in the top right corner.
4. Name the bundle and select the icon & color.
5. After that, simply move the profiles from the right side to the left. The profiles on the left will be applied to the bundle.
6. Save the bundle. Now you can apply it to the rig.



To apply a Bundle, follow these steps:

1. Navigate to the **Rig Manager**
2. On the right side of the RIG TILE, simply select the bundle you created before.

Note that the bundles can also be applied to the whole group or even all rigs at the same time.



Additional Notes & Known Bugs

- If you are using a display attached to the rig, you must use it on the GPU that is connected to the first PCIe slot (usually closest to the CPU). Let that be X1 or X16 slots.
 - If a mixed AMD and NVIDIA rig is used, the NVIDIA should be on the first PCIe slot where the display will be connected to.
- If trying to stop the miner in the middle of benchmarks, the benchmarks will not be stopped. The miner will stop after benchmarks are completed.
- To check benchmark speeds, access the rig locally and run this command:
`cat /var/cache/nhm4/status.json`

How to report bugs?

This is your chance to influence the product that is being actively developed. We will actively monitor all bug reports on [this bug report form](#). We will also be present on the [NiceHash Discord](#) server - please use the **#nhos-v2-alpha-feedback** channel to submit your suggestions and report any issues.

You can save log reports to USB drive by running the following command in NHOS:

```
sudo mkdir /nhos-config/system/log
sudo reboot
```

The first SUDO command will create logs on your USB flash drive, the second one will reboot the NHOS. Reboot is necessary before saving the logs to your PC. On the Windows/MacOS you will see the logs saved in the system/log folder on the USB drive.

Alternatively (preferred) you can send the logs directly to our servers via NHOS by running this command:

```
sudo /nhos/sbin/system-dump.sh --push
```

In the case of pushing the logs to our servers, we need your rig ID or/and your mining address.