


FMS User manual

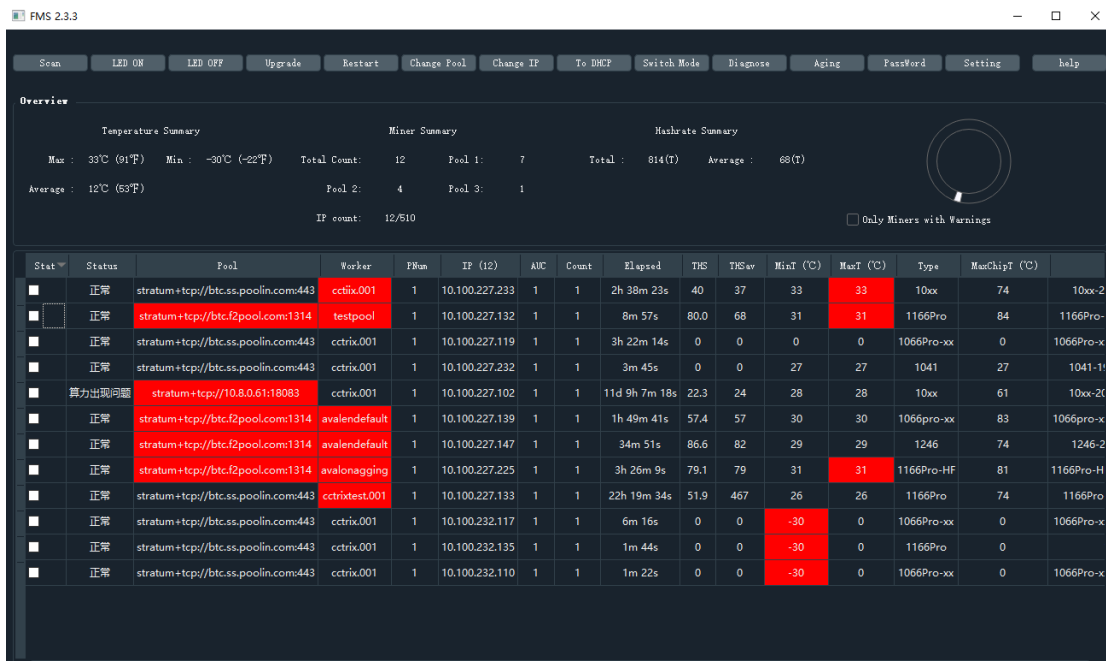
Applicable to 2.0.2 and later version

Download and installation

1. Canaan official download link: <https://download.canaan-creative.com/fms/>. If there are no special requirements, please download the latest version of the zip file to the local. The release notes and user's manual can also be found in the download directory.
2. Unzip the downloaded zip file to the desired location. Without installation, double-click the fmsapp.exe . The file can start FMS directly. For ease of use, you can create a pointer in the appropriate path fmsapp.exe To start quickly.

Start up

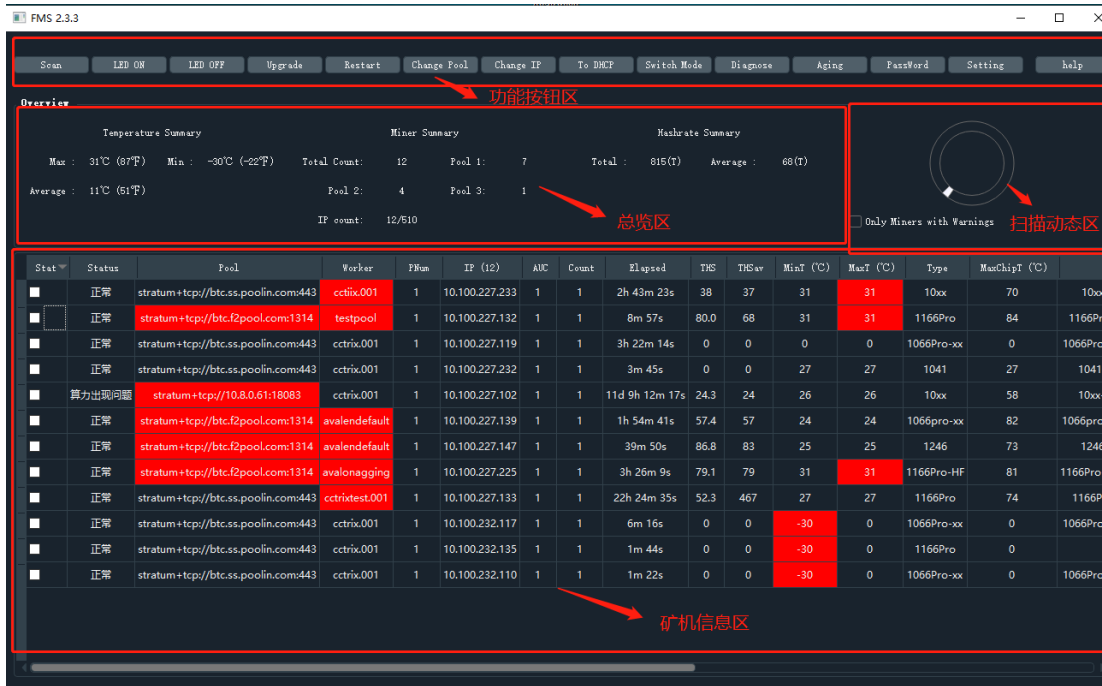
1. If a desktop shortcut is created, you can start FMS by double clicking the desktop shortcut. If it is not created, please enter the unzip directory and double -click fmsapp.exe File start FMS. No administrative rights are required.
2. The main page after FMS startup is similar to this:



If the system started for the first time or just started, you may see that the mouse is in the waiting state and the page is not in use. This indicates that FMS is initializing. It usually takes a few seconds before the normal main page is displayed. If FMS executable files in the same location are started multiple times, they actually share the same configuration, so they are easy to interfere with each other. Please avoid starting multiple instances. If you want to use different configurations to start multiple FMS on the same computer, please copy the entire directory to different paths to generate multiple FMS execution directory instances. Each FMS with different paths uses a separate configuration

Main page introduction

The main Page is roughly divided into four areas: scanning dynamic area, function button area, overview area and miner information area. As shown in the figure below:



The exact version number of the currently installed FMS is displayed in the top title bar.

Functional button area

Scan	Manually scan
LED ON	Batch LED on
LED OFF	Batch LED off
Upgrade	Batch upgrade firmware
Change Pool	Batch switch pool
Change IP	Batch set the default static IP
To DHCP	Set DHCP
Switch Mode	Select high performance or low power mode
Diagnose	Remote diagnose
Aging	Aging
PassWord	Change Password
Setting	Configuration setting

Overview area

Miner information area

Here is a table form of miner information display area, each line represents an independent IP address. If avalon8 or avalon9 has no IP address, the line is a raspberry pie. If avalon10 has an IP address, then a line is a miner

The specific meaning of each column is shown in the table below:

State	Select the status, the function button is only effective for the selected miner
Status	Status of miner and causes of problems
Pool&Worker	Miner and pool name
Number of Miners in Pool	Number of miners in the mine pool
IP	IP address. The total IP number of the current network segment will be displayed in the header bracket of this column .
AUC count	AUC number , no sense of A10
Miner count	all miner's account in same IP
Elapsed Time	Last power on or restart to the current operating market
Real-Time Hashrate(T)	Realtime hashrate, Unit T/s
Average Hashrate(T)	Average hashrate, Unit T/s
Miner	Miner type
Max chip Temperature(°C)	Maximum chip temperature
Ver	Version number


If you double-click the IP address cell, you can directly open the background page of changing IP in the browser.

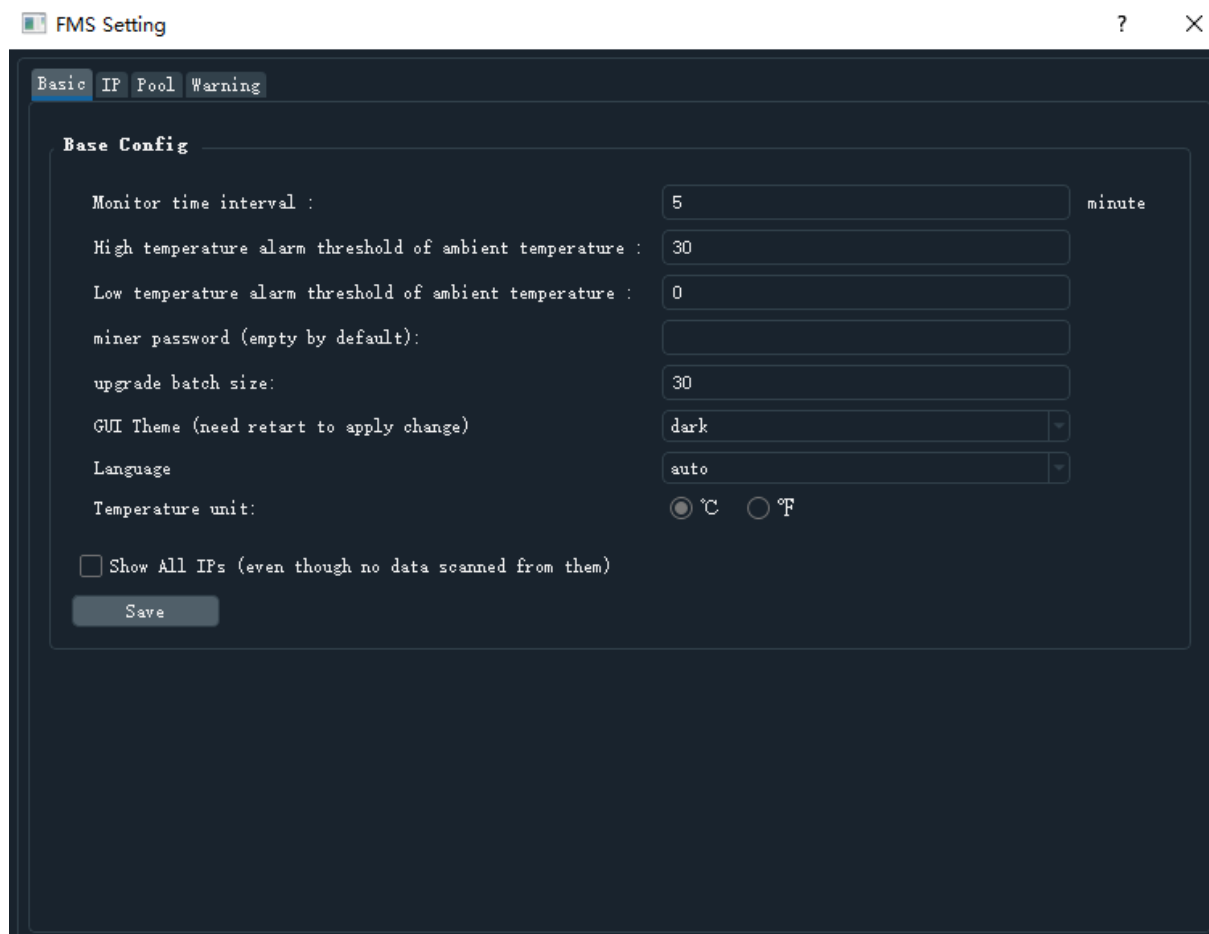
If you double-click the real time hashrate cell, a window will pop up to list the real-time computing power of each miner under the IP.

When installing and using for the first time, the miner information area will be blank. You need to go to the IP range setting page in the setting dialog box explained later to set the scanning IP range to see the miner information.

Function and usage

Setting

Click  button will enter the setting page, default page is as below:



The whole setting page include 4 pages , the introduction as below :

1. Basic Setting page

As shown in the figure above, some basic settings are included. Any modification needs to be saved and effective by clicking the Save button. If you make changes on this page but do not save them and close the window directly, all changes will disappear

Monitor time interval The time interval of background scanning miner is set in minutes. For example, if it is set to 1, it means that the background will scan all the mining machine information every minute. It can be a decimal. For example, 2.5 means two and a half minutes. Can be set to a value less than 1. When the number of miners that can be scanned is very large, it is suggested to increase the scanning interval appropriately to avoid FMS occupying too much system resources.

High temperature alarm threshold of ambient temperature

Used to set the high temperature alarm threshold of air inlet temperature. This setting is valid for any type of miner, which is different from the warning setting that will be explained later. If the air inlet temperature of a miner exceeds the value set here, the maximum air inlet temperature cell of the IP line of the miner information table will be marked with red background, similar to the following figure:



Low temperature alarm threshold of ambient temperature

Similar to the above, the minimum allowable air inlet temperature is set. Note that the units of both settings depend on the subsequent temperature unit setting.

GUI Theme (need restart to apply change)

Used to set the theme style of the graphical interface. At present, there are two optional themes: dark and light. After changing, FMS needs to be restarted to take effect.

Temperature unit

It is used to set the temperature display and setting unit. The default is centigrade (°C). Please note that the setting related to temperature will not be converted automatically because of the change of the unit here. Therefore, after changing the unit here, please change the corresponding temperature setting value to the conversion value under the new unit .

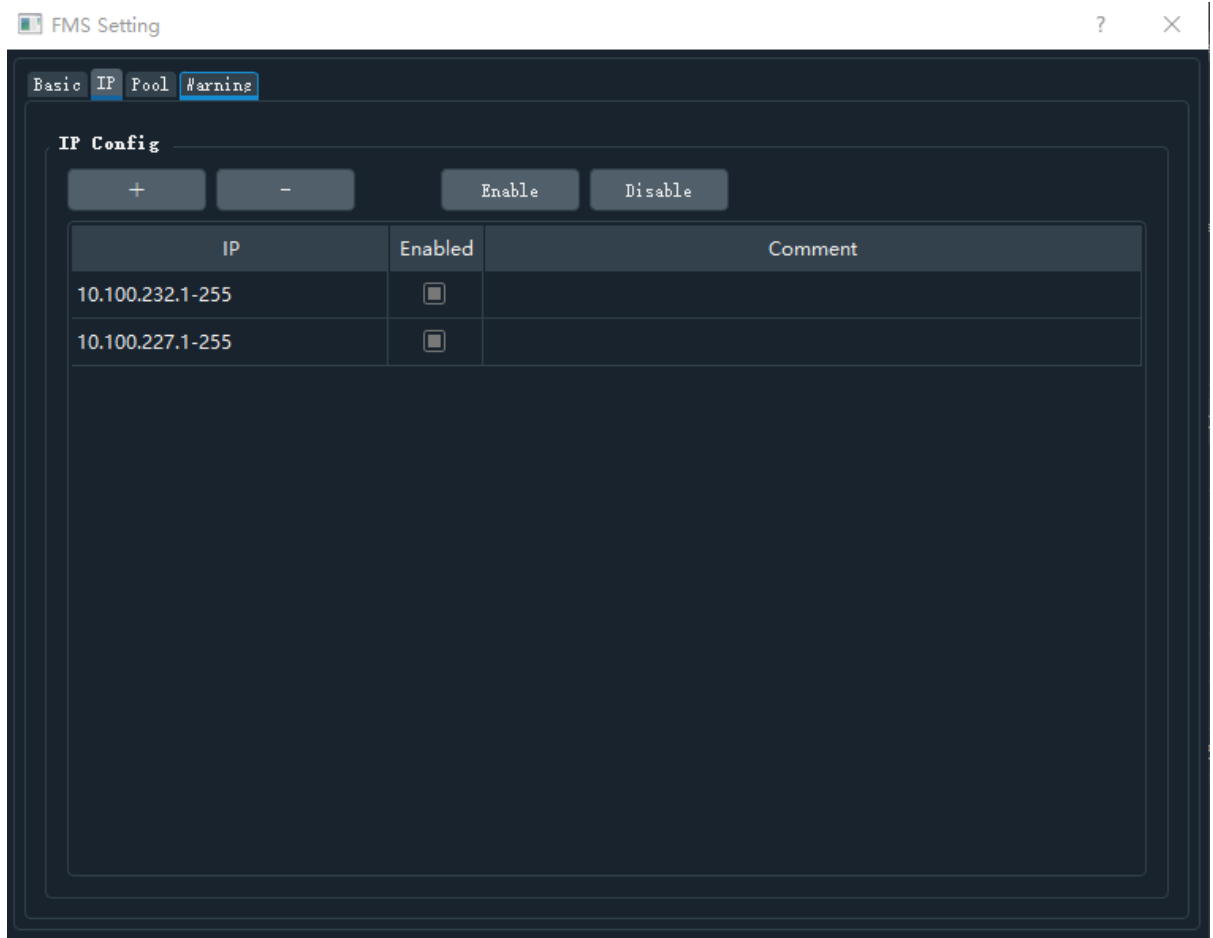
Show All IPs (even though no data scanned from them)

Used to set whether to display all IP addresses. After checking, the IP that has not been scanned will also be listed in a single row in the miner information table (the cells are left blank or 0). This option is useful if you want to see which IPS are not scanned to the miner.

Click the Save button to save the changes you want to keep.

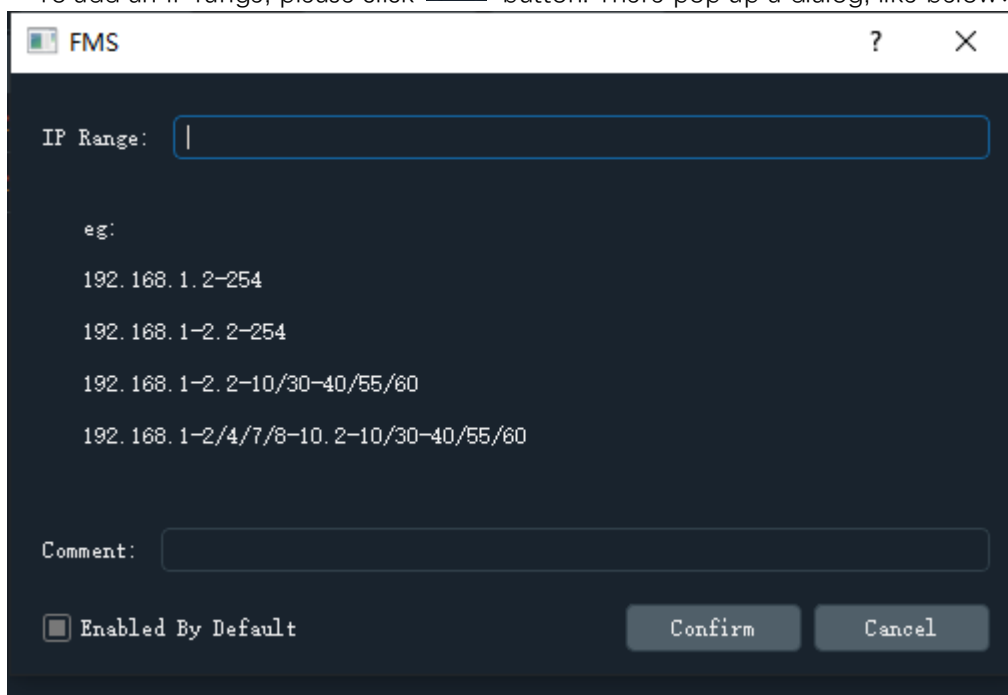
2. IP Scope setting page

Overview like below picture:



The IP address range that FMS can scan is set here. Each row in the table represents a range, the IP column represents the IP range set, the enabled column indicates whether the range is enabled, true means enabled, and false means disabled. Only enabled IP ranges are scanned by the FMS.

To add an IP range, please click button. There pop up a dialog, like below:



In the IP range edit box, you can enter the IP range you want to add. It supports the following formats:

- 1) Scan : You can use dashes to indicate ranges in any byte.

For example:

192.168.1-3.5

designate 192.168.1.5, 192.168.2.5, 192.168.3.5, 192.168.4.5 like 4 IP address. Ranges can be used in multiple bytes at the same time. For example:

192.168.1-2.5-6

Designate 192.168.1.5, 192.168.1.6, 192.168.2.5, 192.168.2.6 like 4 IP address.

- 2) Multiple group separation: slashes can be used to separate multiple sets of ranges or single values in any byte. For example :

192.168.1-2.4-5/8/10/14-15

Designate 192.168.1.4, 192.168.1.5, 192.168.1.8, 192.168.1.10, 192.168.1.14, 192.168.1.15, 192.168.2.4, 192.168.2.5, 192.168.2.8, 192.168.2.10, 192.168.2.14, 192.168.2.15 12 IP.

The eg: section of the dialog box also gives a simple example of the available formats

Enabled By Default Enabled By Default This multiple check box indicates whether you want to enable it by default. If it is checked, it means that it is enabled after adding, otherwise it is disabled after adding.

Click confirm button to confirm the addition.

If you want to delete, enable or disable some IP ranges, you need to highlight the IP range to be operated, and support the shortcut key of Ctrl + A to select all and press and hold shift to select continuously, or press and hold Ctrl to select individually. After that, if you click

button ,the selected row will be delete., If you click button ,the selected row will be

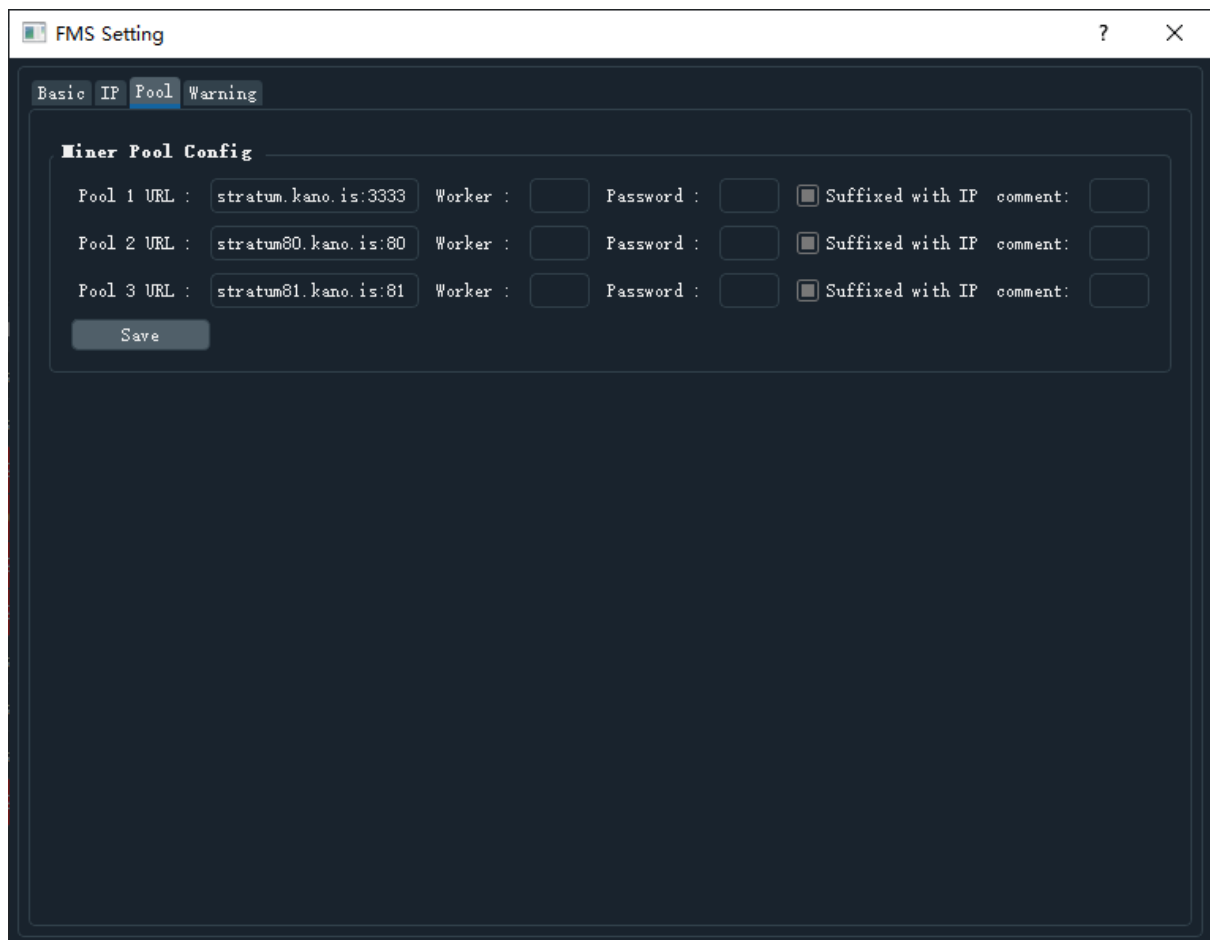
enabled. If you click button and the selected row will be disabled .this change will be validate at once, There is no need to save it separately.

Double click the IP cell or comment cell to edit directly. Click anywhere else to finish editing. Annotation is used to add custom information to an IP segment. It is only for the convenience of users' cooperative understanding. It does not affect the scanning function itself.

3 . Pool Setting page

Here is the information of the mine pool to be used in the future. Note that it does not really change the current pool of any miner, but just to make some settings for switching the pool operation, so as to save the trouble of re entering the information of the pool every time.

Page is as below :



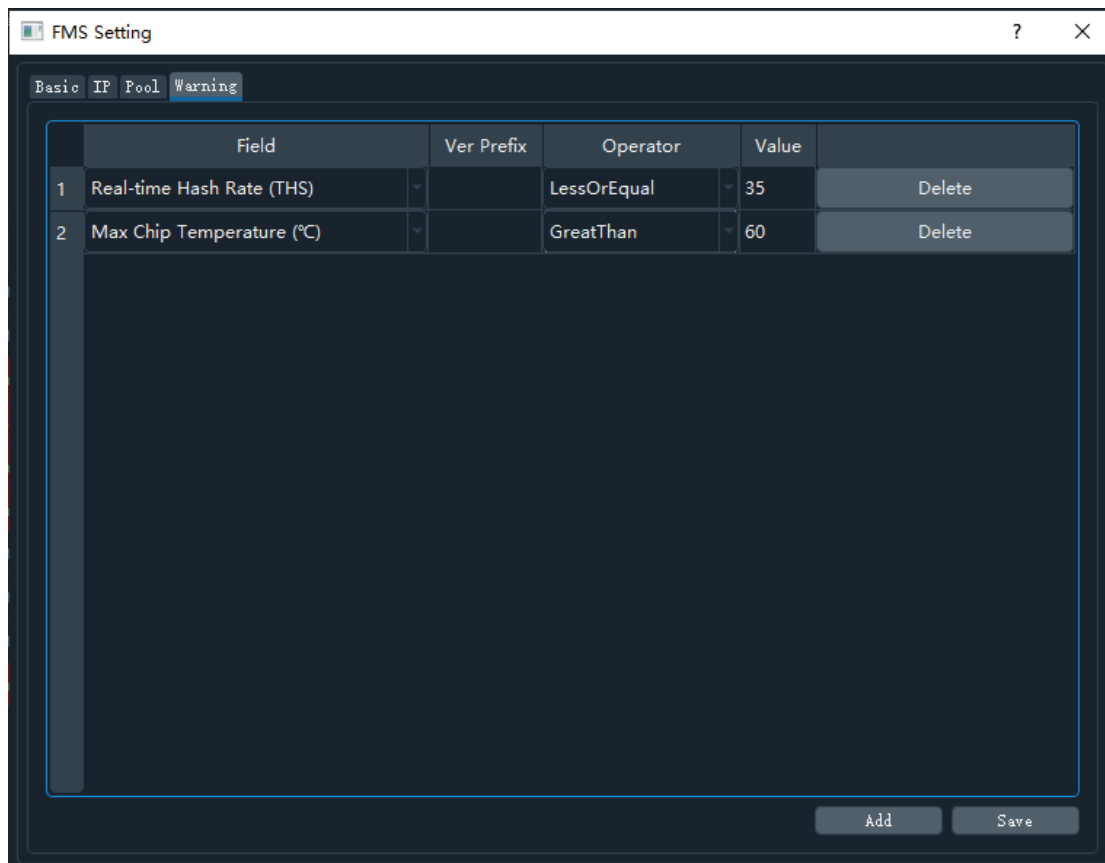
A total of up to three pools can be set. Each setting contains three parts: Mine pool address, miner's name and password. There is also a multiple selection box with IP. If suffixed with IP is checked, it means that the IP address of the miner (or the IP address of the raspberry pie) should be used as the suffix of the miner's name. In this way, the IP address can be seen in the pool & worker column of the miner information table, and the same IP address can be seen in the mine pool's own web page, which is convenient for distinguishing the statistical information of each miner. The default is checked.

If you have made changes in this page, please click the Save button to save, otherwise all changes will be lost when closing the settings page.

3. Warning Setting page

It is used to finely control which cells in the miner information table need to be marked with warning color (red), including several warning rules. Each line represents a warning rule, including four parts: field (check field), ver prefix (version prefix), operator (comparison rule) and value (threshold value). When the complete version of a miner starts with the version prefix in the rule, the rule will be applied to the miner. When displaying the information of the miner, warning signs will be made according to all the warning rules that can be applied to it

The Page as below :



It is used to finely control which cells in the mine information table need to be marked with warning color (red), including several warning rules. Each line represents a warning rule, including four parts: field (check field), ver prefix (version prefix), operator (comparison rule) and value (threshold value). When the complete version of a miner starts with the version prefix in the rule, the rule will be applied to the miner. When displaying the information of the miner, warning signs will be made according to all the warning rules that can be applied to it

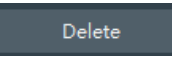
At present, there are three fields supported: implementation hashrate, maximum chip temperature and maximum air inlet temperature. Other fields with warning value may be added in the future.

At present, The supported comparison rules are: LessOrEqual, LessThan, GreateOrEqual, GreaterThan, Equal.

If you need to add a new rule, please click at the bottom of the page, please click the below



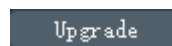
button .

To delete a rule, click the right side  button .

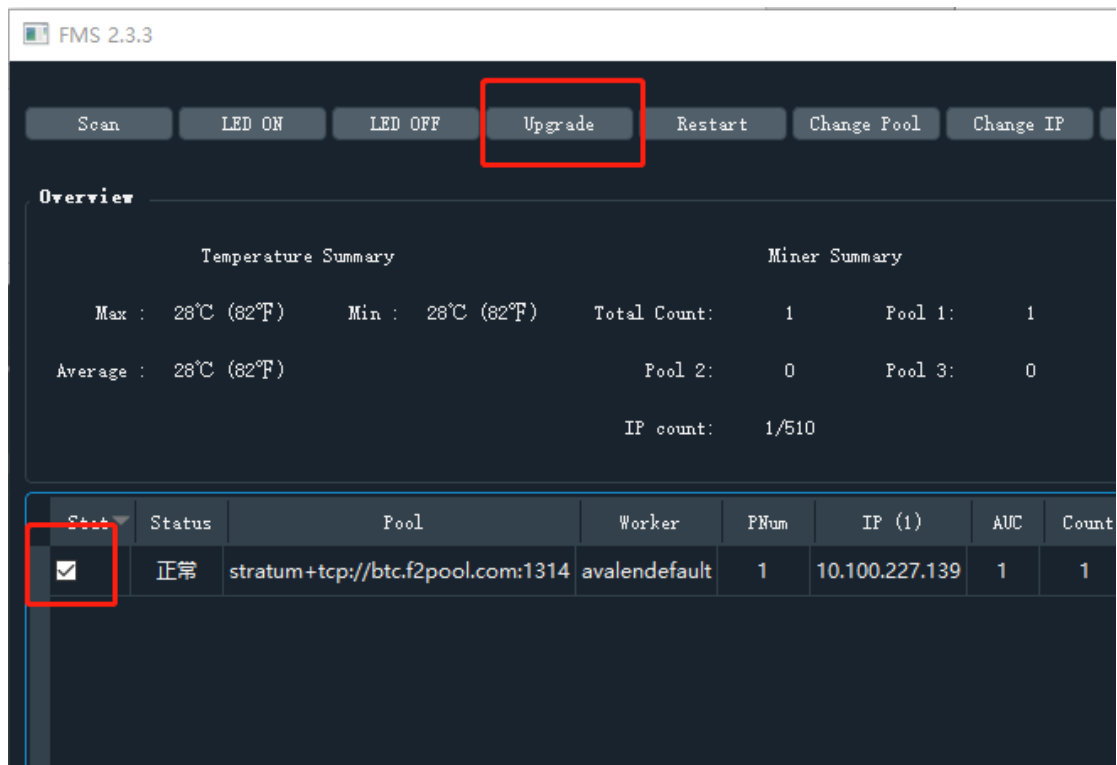
If you have made any additions, deletions or modifications, please click Save to save. Otherwise, the changes will be lost when you close the settings dialog box.

5. Firmware upgrade

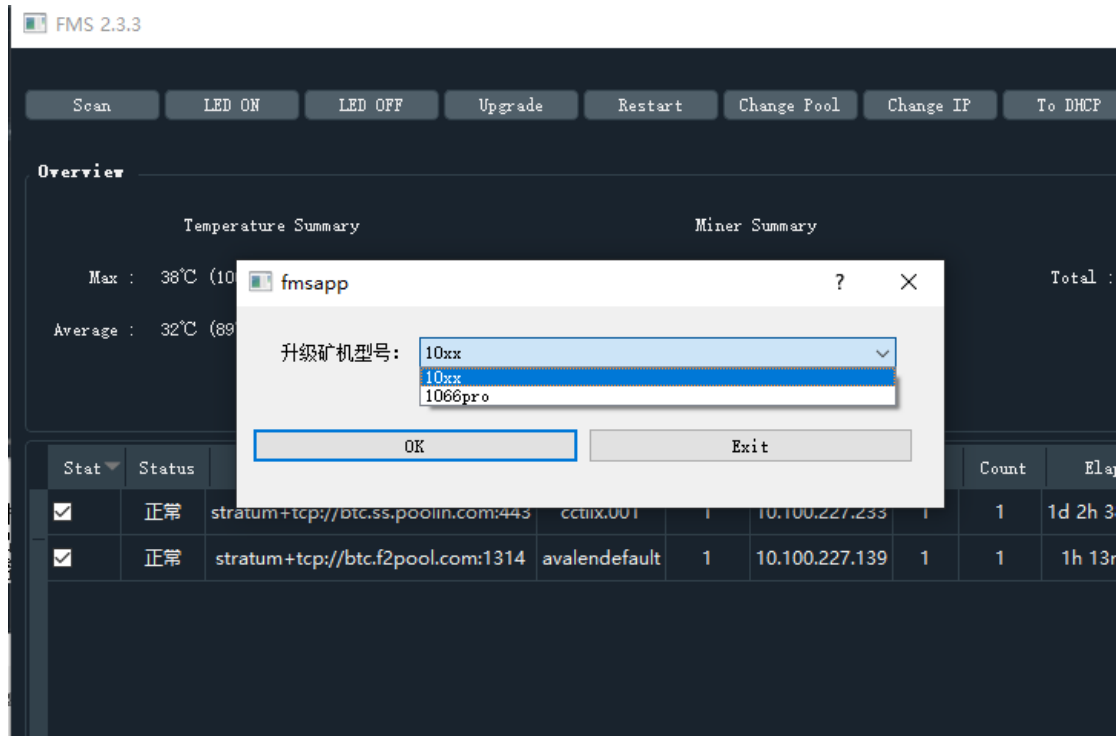
The user selects the corresponding miner in the main interface and clicks the



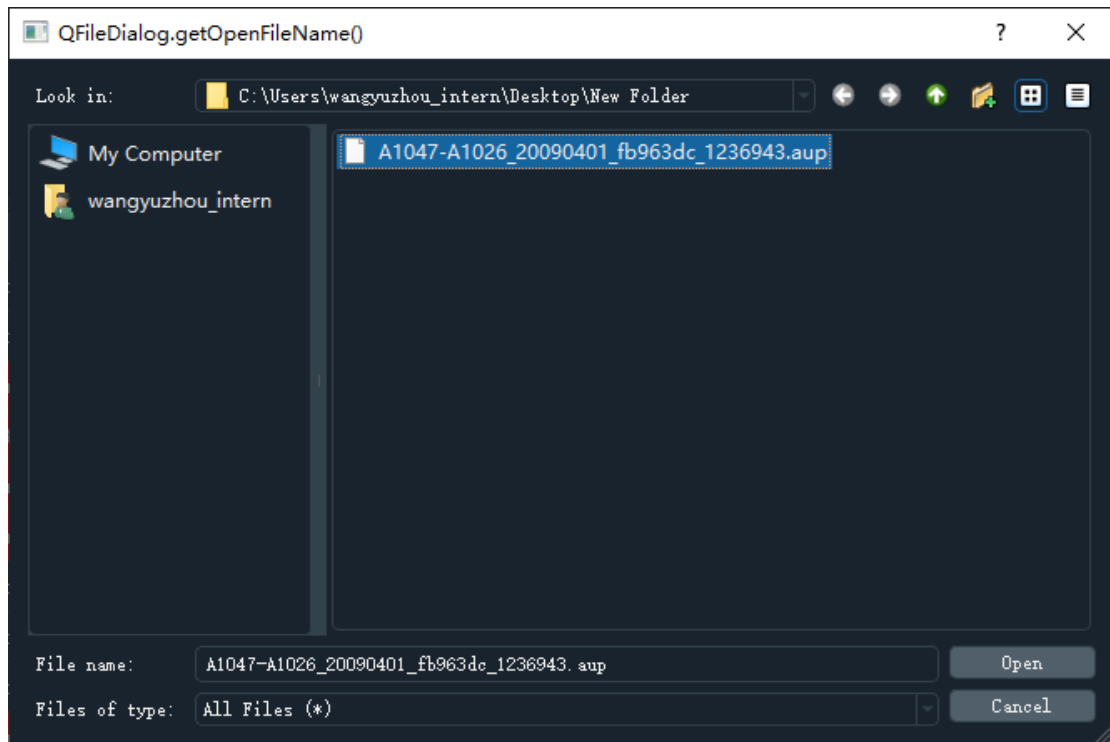
button. A selection box will pop up.



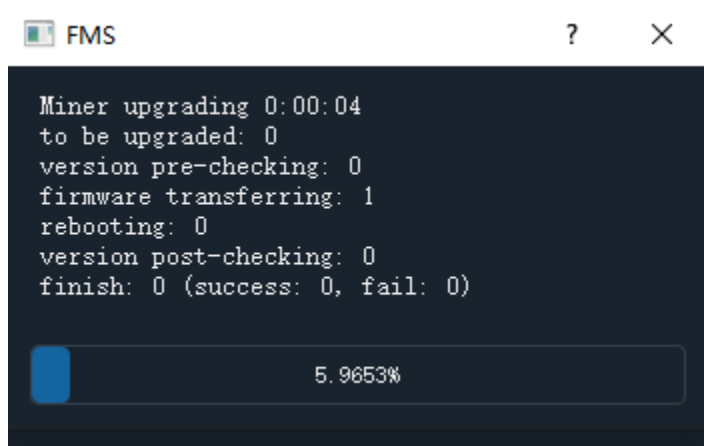
When multiple mining machines are selected for batch upgrade, the latest version of FMS will prompt to select the model of upgraded firmware.



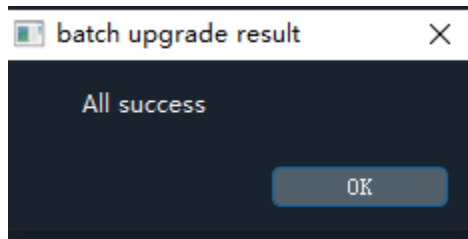
Select firmware to upgrade, click open and start upgrade.



Start upgrade and load progress strip



After the update, a dialog box will pop up to tell you the result. If all are successful, all upgrades were successful. Otherwise, all IP addresses that failed to upgrade will be listed.



6.Batch on and off LED

First, select one or more mining machines through the multi selection box in the state column in the miner list, and then click the LED on button to light up the LED lights on these miner. The progress bar will be displayed in the process of lighting. After the progress bar disappears, a dialog box will pop up to tell whether the lighting is successful. After successful lighting, the LED light will flash yellow and green (some models will always turn on white light).

FMS 2.3.3

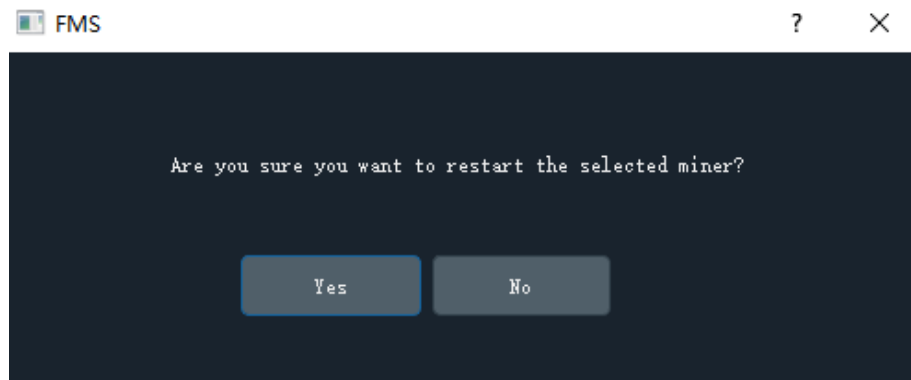


7.Batch reboot

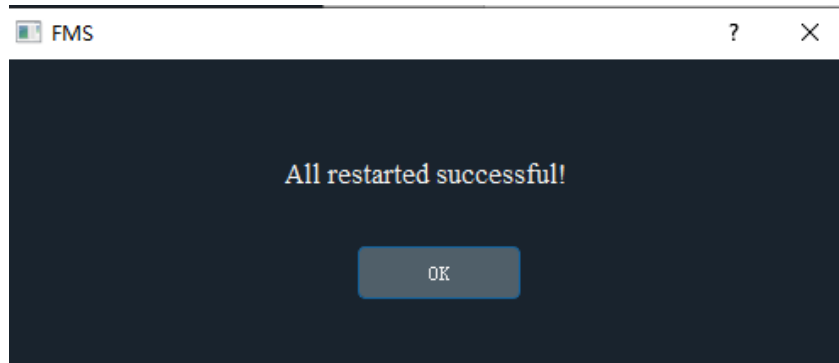
First, select one or more miners in the list of miner through the multi selection box in the state column, and then click the restart button to restart them. During the restart process, a progress bar will be displayed. After the progress bar disappears, a dialog box will pop up to tell whether the restart is successful. After a successful restart, the miner needs a period of time to enter the normal mining state. During this period, FMS may not be able to scan these newly restarted miner.



Click start and you will be prompted to choose whether to upgrade the selected miner



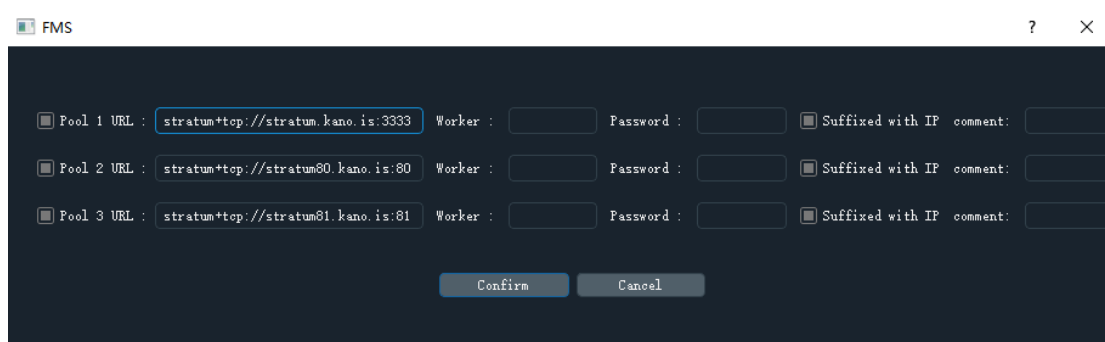
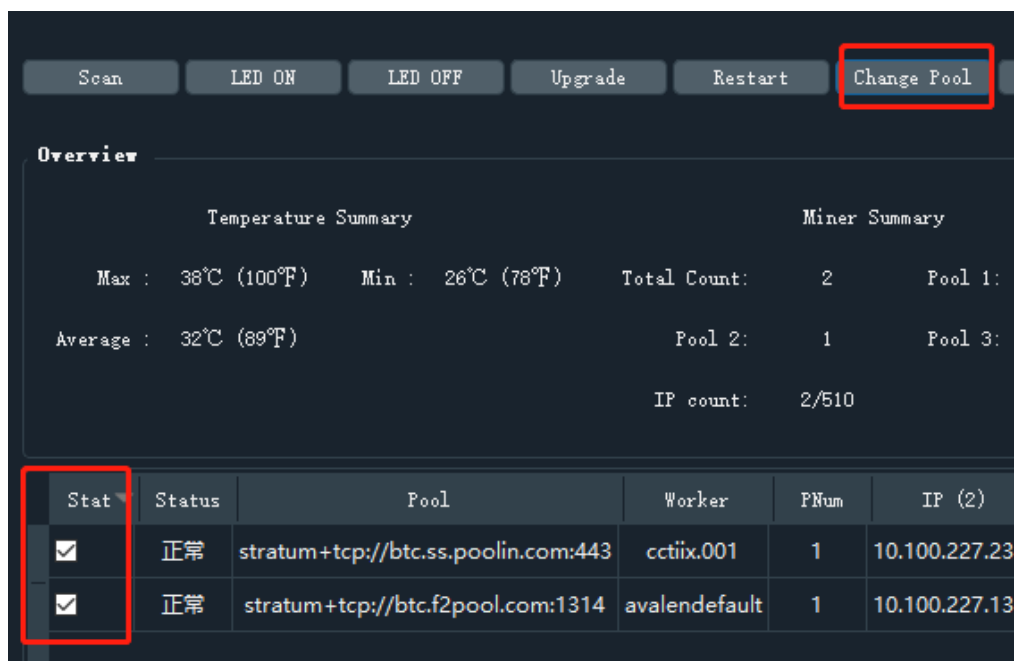
Restart success



8. Batch switch pool

First, select one or more miners through the multi selection box in the state column in the miner list, and then click the change pool button to pop up a dialog box to configure the

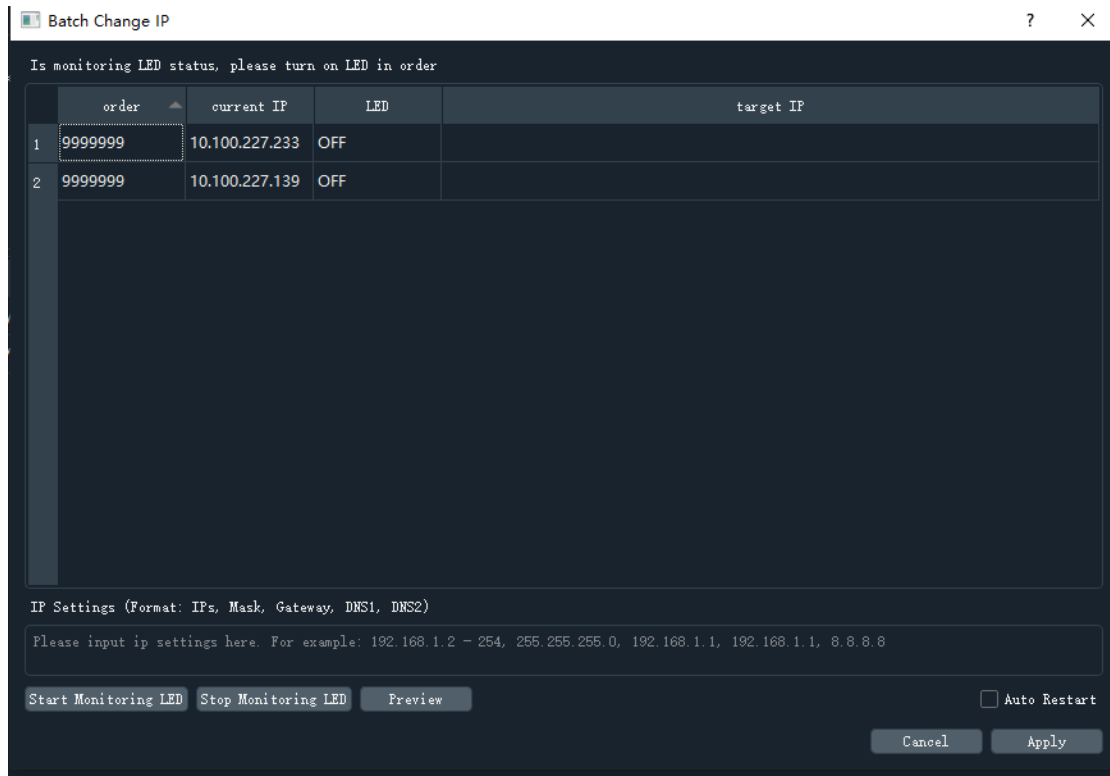
pool. After confirmation, FMS will cut the selected miner. A progress bar will be displayed during pool switching. After the progress bar disappears, a dialog box will pop up to tell whether the pool switching is successful. After successful pool cutting, the mining opportunity will restart and it will take a period of time to enter the normal mining state. During this period, FMS may not scan these miners that have just cut the pool



9. Batch set the static IP address

Step 1: start the batch set IP dialog

Check the multiple miners that need to set static IP, and then click the **Change Pool** button to enter the dialog box of setting static IP address



The top row here is the result or error prompt, and the table below is the information of the selected miner. The order column indicates which miner has been manually lighted, 9999999 indicates that it has not been manually lit; the current IP column indicates the current IP address of the miner; the LED column indicates the current real-time LED light status of the miner, on means the light is on, and off means that the light is off (note: turning off the light only indicates that there is no light on, the actual led must be on other colors); target IP The list shows the IP address to be changed to.

Step 2: LED ON

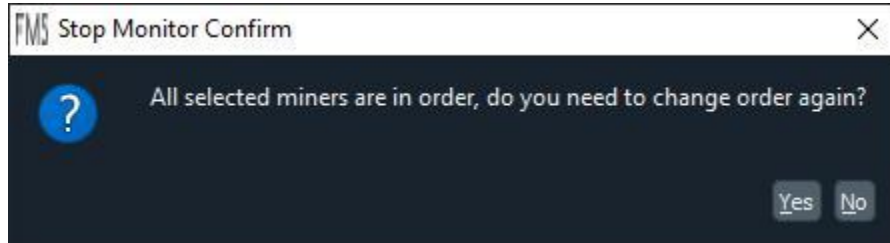
When you see that all the LED states in the table are off, usually this time the prompt message will be like this:

Is monitoring LED status, please turn on LED in order

At this point, you can start to manually light up the miner in turn according to the configured IP sequence. The way to light up is to press the small button on the miner for a short time (Note: there is another concave button on Avalon 10 miner, which is used to restore the factory settings, please do not confuse). When the white light is on and then goes out automatically, it means that AMS system has detected the lighting and finished recording. If the light does not turn off automatically after it is on, please wait for a moment. It may be that AMS scanning has a certain delay. If it doesn't go out automatically for more than 10 seconds, it may be that the wrong light is on (the miner is not among the ones selected at first), and there may be a problem with the communication of the miner. Please check it separately. Each time it detects that a selected miner is lighted, AMS will display the status in real time and turn off the light automatically. At this time, similar information will be displayed on the prompt bar:

192.168.193.167 has been turned on in order 1

The front is the current IP address of the detected miner, and the last number indicates the order in which it is lit. After all the miner's lamps have been changed, the dialog box will continue to light up:



if the lighting sequence is confirmed to be correct, you can select no to stop scanning. If you are not sure, or if you find that the sequence is wrong, you can select Yes to turn on the lights again to change the order. The purpose of stopping scanning is that if the light is touched by mistake, the current determined sequence will not be affected. If you want to restart scanning

after stopping scanning, you can click the button **Start Monitoring LED** on the dialog box. At

any time, you can stop scanning by clicking the button **Stop Monitoring LED** to avoid the influence of touching the light by mistake. If the lighting sequence is wrong, the first wrong miner can be turned on again. At this time, AMS will clear the sequence numbers of all miners that have been lighted after this miner. It is equivalent to lighting up the wrong miner in turn again.

Step 3: set IP segment

After all the miner have the serial number, the static IP segment can be configured. At the bottom of the table is the edit box for the static IP address segment. Each line represents a set of IP address settings. There can be multiple lines. Each line contains IP segment, subnet mask mask, gateway IP address, gateway, primary DNS address and standby DNS address. These five items need to be separated by commas. For example: 192.168.193.2-5, 255.255.255.0 ,192.168.193.1, 114.114.114.114,202.106.0.20

It indicates that the IP segment has four available addresses from 192.168.193.2 to 192.168.193.5. The subnet mask is 255.255.255.0, the gateway is 192.168.193.1, the primary DNS is 114.114.114.114, and the standby gateway is 202.106.0.20. The format of IP segment is the same as IP range format in FMSIP range setting.

In addition, it also supports the default prefix: if the current IP address of the selected miner is in the same network segment, then the first few bytes of the configured IP address segment can be omitted, and the omitted bytes are the same as those in front of the current IP address. For example, if the current IP addresses start with 192.168.3, writing 5.7-10 directly is equivalent to writing 192.168.5.7-10. The IP address sequence expressed in each line is used to set the static IP of the miner in order. If the number of IP addresses in the first line is not enough, it is taken from the sequence of the second line. The situation of more lines is similar. Please specify the static IP segment according to the order of lighting. After editing, go to the next step. (in fact, the editing of IP settings can be done at any time, not necessarily after

lighting up).

Step 4: Preview

After editing the settings, you can click the button **Preview** to preview the settings. AMS will extract the static IP sequence value according to the content in the IP setting box, and fill in the target IP column in the order from small to large, so as to confirm whether it meets the expectation. If there is anything wrong with the above IP segment settings, the preview action will fail and an error message will be displayed at the top. When preview fails, all values of target IP column will become empty. Please re edit IP segment settings and preview again. After the preview is successful, you can go to the next step.

Step 5: Perform change action

After confirming that there is no problem with all static IP correspondence, click the button **Apply** to start the static IP address setting action, and AMS will modify the static IP setting of all mining machines according to the corresponding relationship in the table. If AMS is required to restart the miner after setting, please check **Auto Restart**. If it is not checked, AMS will only set the new static IP to the miner, and these settings will take effect only after the power failure or batch restart function is restarted. Batch setting static IP function can also be used to modify the IP of a single miner. If only one miner is selected, there is no need to light the lamp. You only need to set the IP and execute the change.

10. Set DHCP

Select the machine to reconfigure DHCP and click **To DHCP**

FMS 2.3.3

Scan LED ON LED OFF Upgrade Restart Change Pool Change IP **To DHCP** Switch Mode

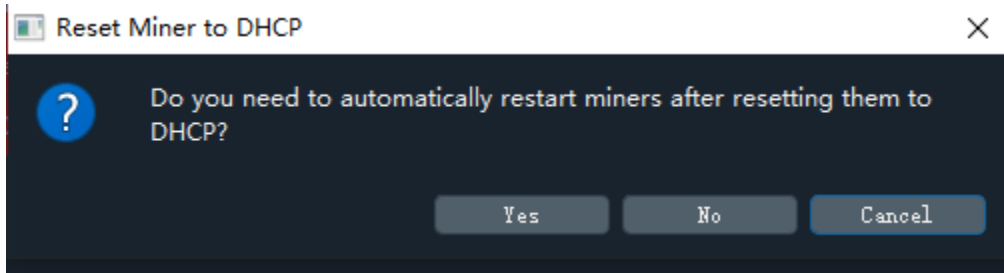
Overview

Temperature Summary Miner Summary Hashrate Summary

Max : 36°C (96°F) Min : -30°C (-22°F) Total Count: 3 Pool 1: 2 Total : 94(T) Average : 11°C (51°F) Pool 2: 1 Pool 3: 0 IP count: 3/510

Stat	Status	Pool	Worker	PNum	IP (3)	AUC	Count	Elapsed	THS	THSav
<input type="checkbox"/>	正常	stratum+tcp://btc.ss.poolin.com:443	cctix.001	1	10.100.227.233	1	1	15h 15m 17s	36	37
<input type="checkbox"/>	正常	stratum+tcp://btc.f2pool.com:1314	avalendefault	1	10.100.227.139	1	1	15h 14m 57s	57.4	57
<input checked="" type="checkbox"/>	正常	stratum+tcp://btc.ss.poolin.com:443	cctrix.001	1	10.100.232.117	1	1	22s	0	0

After clicking the button, a dialog box will pop up asking whether to configure DHCP and restart. Click Yes.

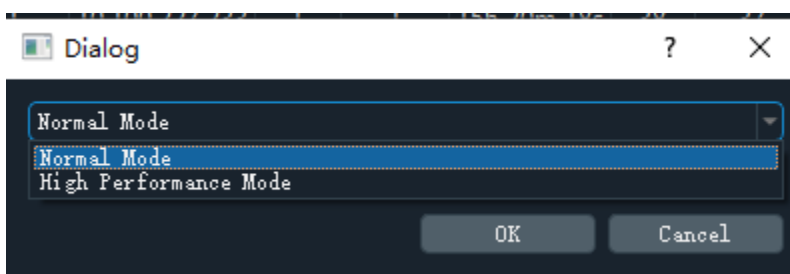
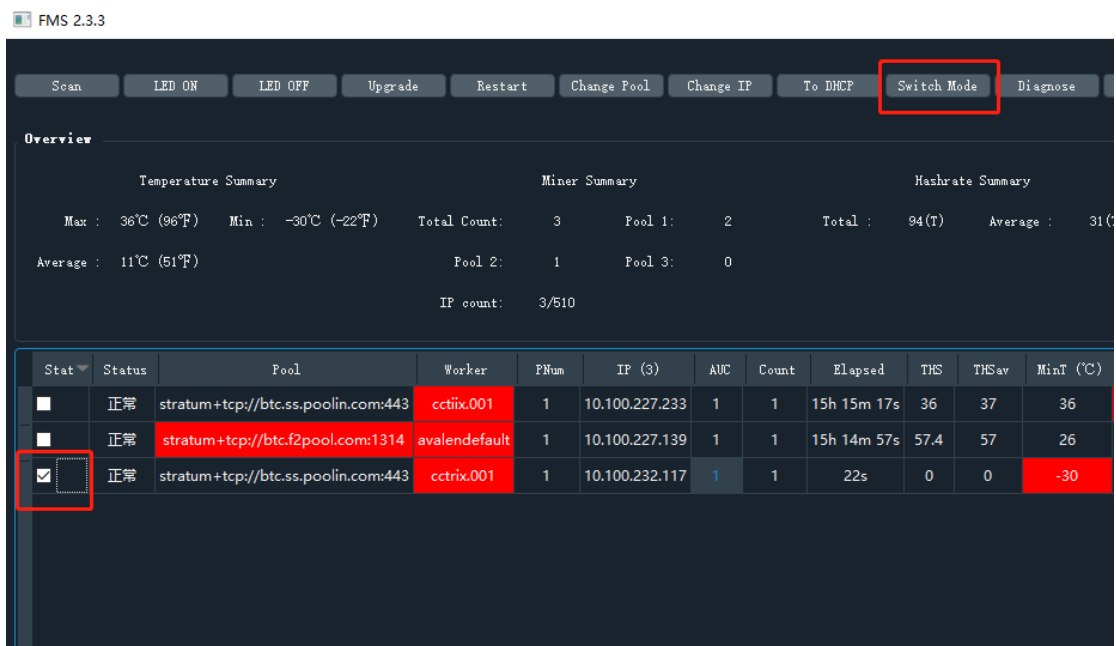


11. Batch modification of miner working mode

Select the miner to modify the mode, and then click **Switch Mode** to select the working mode.

Normal mode is low power consumption.

High performance mode is high performance mode



12. Change Password

Select a miner to change the password in status, and click the button **Password** to pop up the modify box to modify the password.

If you forget the password before the change, you can click the button **Diagnose** and enter the command to display the current password.

```
[[{"command": "ascset", "parameter": "0,password,private"}]]
```

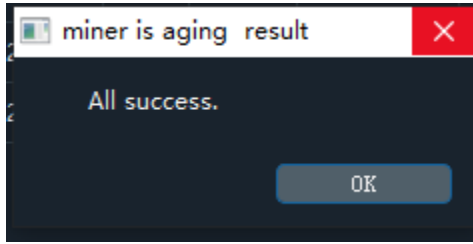
```
response:
success: {'session': '1603333965', 'success': [{'ip': '10.100.232.117'}], 'error': [], 'results': [{'node': {'ip': '10.100.232.117'}, 'result':
[{'result': {'STATUS': [{'STATUS': 'I', 'When': 517, 'Code': 118, 'Msg': 'ASC 0 set info: User[root] Password[root]', 'Description': 'ogminer
4.11.1'}, {'id': 1}]}], 'error': False}]}
```

13. Batch aging of miner

Select a miner to be aged in status and click the button **Aging** to start aging.

Stat	Status	Pool	Worker	Phum	IP (3)	AUC	Count	Elapsed	THS	THSav	MinT (°C)	MaxT (°C)
<input type="checkbox"/>	正常	stratum+tcp://btc.ss.poolin.com:443	cctix.001	1	10.100.227.233	1	1	15h 25m 18s	36	37	38	38
<input type="checkbox"/>	正常	stratum+tcp://btc.f2.poolin.com:1314	avalendefault	1	10.100.227.139	1	1	15h 24m 58s	57.4	57	25	25
<input checked="" type="checkbox"/>	正常	stratum+tcp://btc.ss.poolin.com:443	cctix.001	1	10.100.232.117	1	1	6m 44s	0	0	-30	0

All success will be pop up after Set success.



14. Configure import and export

fmsapp.exe The config directory under the directory is the storage location of all configurations. As long as the directory is backed up or restored, the configuration can be exported and imported.