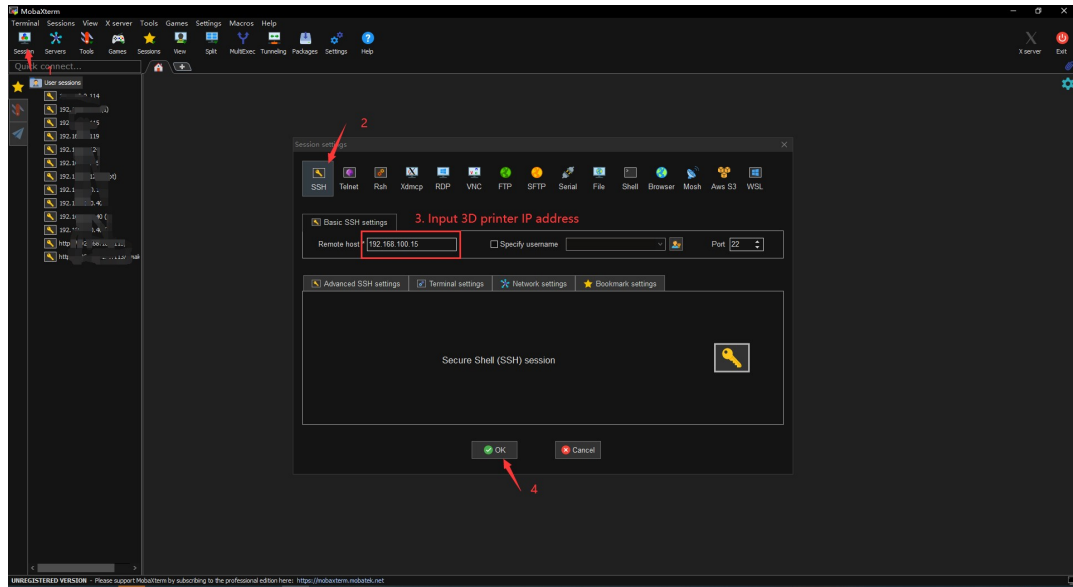
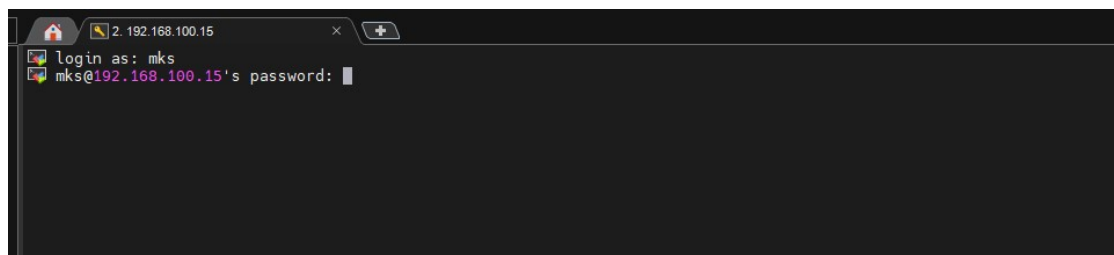


## Before install:

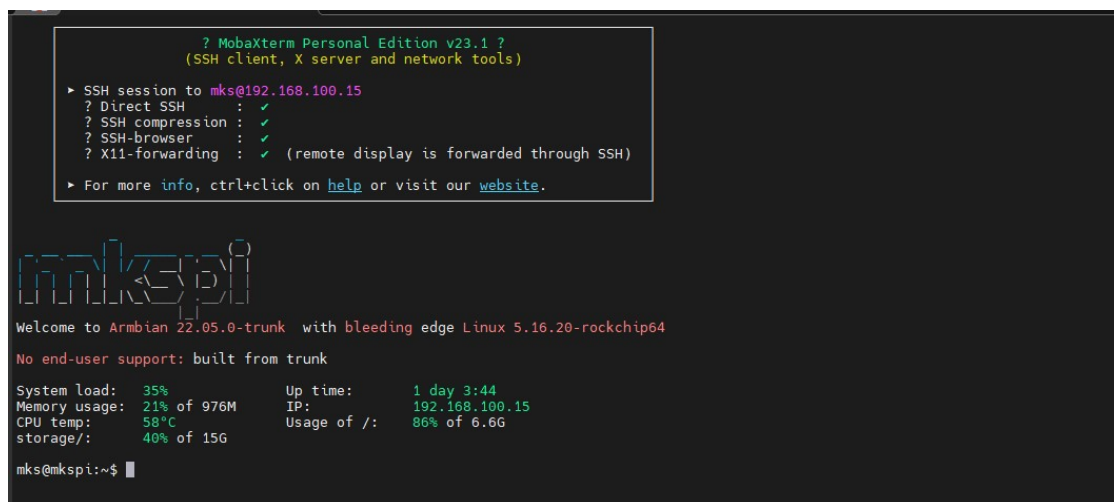
1. Ensure that the printer and personal computer has been connected to the same network, using any SSH connection software to access the printer's LINUX system. In this manual, using MobaXterm access to printer system. Please refer to the following chart.



2. After entering, you will be asked to enter your login ID and password. Please log in with mks and password: makerbase.



Successful login will be shown as below:



3. Confirm the environment time, use the command “date” to check the Linux system time.

**date**

```
mks@mkspi
Welcome to Armbian 22.05.0-trunk with bleeding edge Linux 5.16.20-rockchip64
No end-user support: built from trunk

System load: 35%      Up time: 1 day 3:44
Memory usage: 21% of 976M  IP: 192.168.100.15
CPU temp: 58°C      Usage of /: 86% of 6.6G
storage/: 40% of 15G

mks@mkspi:~$ date
Wed 11 Jan 2023 04:13:21 AM PST
mks@mkspi:~$
```

If the time is not correct, enter the following command to change it to the correct time.

For example the current time is 20230928 14:52:00,

**sudo date -s "20230928 14:52:00"**

And you may need to input the password of mks.

Time changed will be shown as below:

```
mks@mkspi
Welcome to Armbian 22.05.0-trunk with bleeding edge Linux 5.16.20-rockchip64
No end-user support: built from trunk

System load: 35%      Up time: 1 day 3:44
Memory usage: 21% of 976M  IP: 192.168.100.15
CPU temp: 58°C      Usage of /: 86% of 6.6G
storage/: 40% of 15G

mks@mkspi:~$ date
Wed 11 Jan 2023 04:13:21 AM PST
mks@mkspi:~$ sudo date -s "20230928 14:52:00"
[sudo] password for mks:
Thu 28 Sep 2023 02:52:00 PM PDT
mks@mkspi:~$
```

## Start installing the Tlmelapse plugin:

(1)Installation of ffmpeg, please enter the following command

**sudo apt install ffmpeg**

Here you will be prompted to enter the password, just enter the password again, different models and different batches of machine systems may have installed ffmpeg, just make sure that you have ffmpeg in your system.

(2)Installation of moonraker timelapse plugin

Install the moonraker timelapse plugin, log in with mks and input the following command

**cd /home/mks**

**git clone https://github.com/mainsail-crew/moonraker-timelapse.git**

```
cd moonraker-timelapse
```

```
make install
```

During the installation, you will be required to input "Y" to confirm and enter the user password, just follow the prompts to confirm and enter. The whole process takes about ten minutes, please wait patiently.

If the problem occurs in the middle of the process, it is a priority to confirm whether the system time has been synchronized to the correct time and whether the connected network is able to connect to the Internet. If the problem still can't be solved, please send a complete screenshot of the reason for the failure to our after-sales team, and we will help you to solve the problem as soon as possible.

**Usual Error 1:** If display `gnutls_handshake()` failed: The TLS connection was non-properly

Please input the following command:

```
git config --global --unset https.https://github.com.proxy
```

```
git config --global --unset http.https://github.com.proxy
```

Then input following command:

```
git clone https://github.com/mainsail-crew/moonraker-timelapse.git
```

**Usual Error 2:**

```
#####
Would you like to proceed? [Y/n]: Y
Check for dependencies to use moonraker-timelapse ...
Dependency 'moonraker' found ... [OK]
Dependency 'klipper' found ... [OK]
Installing core dependencies: 'wget' ...
[sudo] password for qidi:
Hit:1 http://deb.debian.org/debian buster InRelease
Hit:2 http://security.debian.org buster/updates InRelease
Hit:4 http://deb.debian.org/debian buster-updates InRelease
Get:5 http://deb.debian.org/debian buster-backports InRelease [51.4 kB]
Get:3 http://fi.mirror.armbian.de/apt buster InRelease [52.7 kB]
Fetched 104 kB in 4s (28.3 kB/s)
Reading package lists... Done
Reading package lists... Done
Building dependency tree
Reading state information... Done
wget is already the newest version (1.20.1-1.1).
0 upgraded, 0 newly installed, 0 to remove and 235 not upgraded.
Stopping related service(s) ...
Stopping service 'moonraker.service' ... [OK]
Stopping service 'klipper.service' ... [OK]
Stopping service 'klipper_mcu.service' ... [OK]
Old data structure found. Linking extension to moonraker ... [FAILED]
Dependency 'ffmpeg' found in '/usr/bin/ffmpeg'
Starting related service(s) ...
Starting service 'moonraker.service' ... [OK]
Starting service 'klipper.service' ... [OK]
Starting service 'klipper_mcu.service' ... [OK]
moonraker-timelapse successful installed ...

Please add the following to your moonraker.conf:

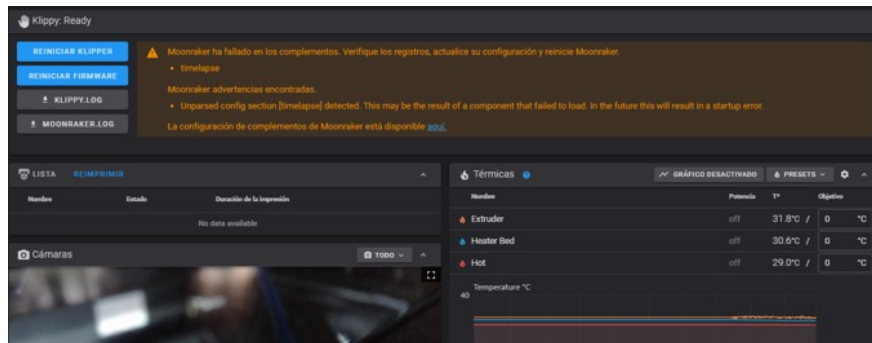
- for Printer :
[timelapse]
output_path: ~/timelapse/
frame_path: /tmp/timelapse/

- for Printer klipper_config:
[timelapse]
output_path: ~/klipper_config/timelapse/
frame_path: /tmp/timelapse/klipper_config

Folder structure and service count does not match!
Please update only moonraker.conf of the installed printer

For further information please visit:
https://github.com/mainsail-crew/moonraker-timelapse/blob/main/docs/configuration.md
Happy printing!
qidi@qidi:/home/mks/moonraker-timelapse$
```

It shows that the installation has been successful, but the replacement of the old data component fails, and the fluidd page shows a warning about the component as follows



After completing the installation, input the following commands

**su root**

**cp /home/mks/moonraker-timelapse/component/timelapse.py /home/mks/moonraker/moonraker/components/**

Note: When switching the root identity, you will need to enter the root password, just follow the system prompts to enter it.

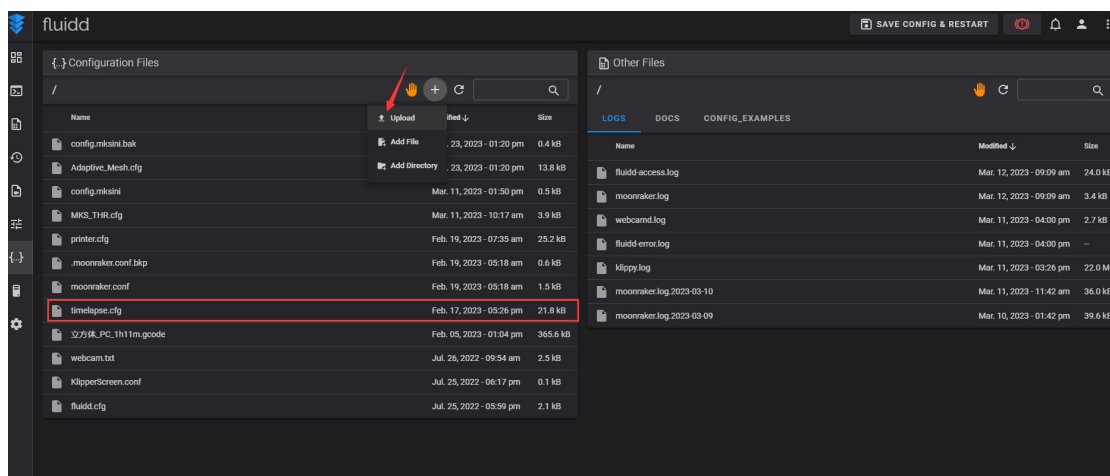
Finally input the following command and reboot printer.

**sync**

(3)After installing these two plug-ins, we have to configure these plug-ins, first you need to get the timelapse.cfg document, you can get it through the following URL, and upload the configuration file through fluidd.

File:

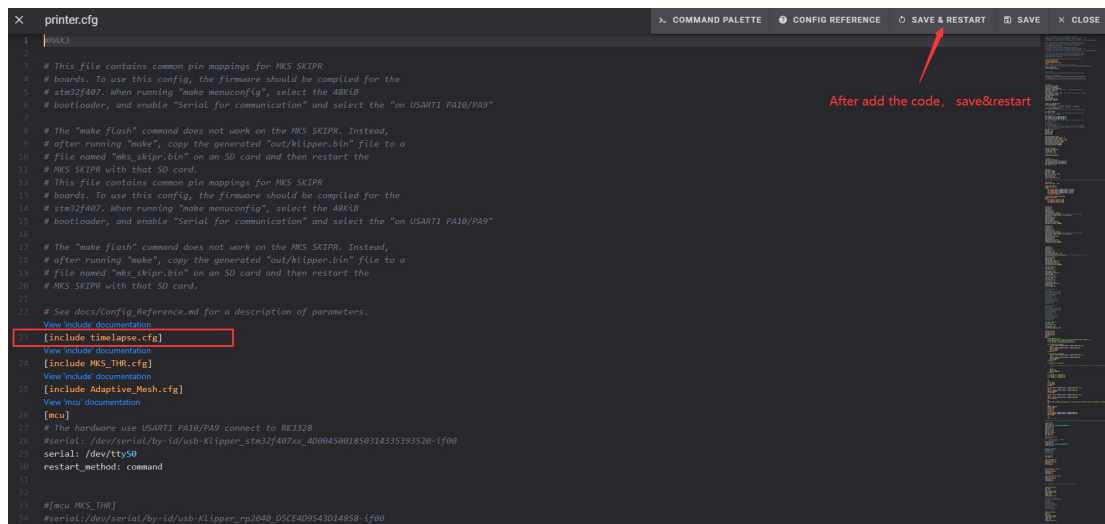
[https://github.com/mainsail-crew/moonraker-timelapse/blob/main/klipper\\_macro/timelapse.cfg](https://github.com/mainsail-crew/moonraker-timelapse/blob/main/klipper_macro/timelapse.cfg)



(4)Modify the printer.cfg file.

Add the following code:

**[include timelapse.cfg]**



```
1 #MKS
2
3 # This file contains common pin mappings for MKS SKIPR
4 # boards. To use this config, the firmware should be compiled for the
5 # stm32f407. When running "make menuconfig", select the 48K18
6 # bootloader, and enable "Serial for communication" and select the "on USART1 PA10/PA9"
7
8 # The "make flash" command does not work on the MKS SKIPR. Instead,
9 # after running "make", copy the generated "out/klipper.bin" file to a
10 # file named "mks_skipr.bin" on an SD card and then restart the
11 # MKS SKIPR with that SD card.
12
13 # This file contains common pin mappings for MKS SKIPR
14 # boards. To use this config, the firmware should be compiled for the
15 # stm32f407. When running "make menuconfig", select the 48K18
16 # bootloader, and enable "Serial for communication" and select the "on USART1 PA10/PA9"
17
18 # The "make flash" command does not work on the MKS SKIPR. Instead,
19 # after running "make", copy the generated "out/klipper.bin" file to a
20 # file named "mks_skipr.bin" on an SD card and then restart the
21 # MKS SKIPR with that SD card.
22
23 # See docs/Config_Reference.md for a description of parameters.
24
25 View include documentation
26 [include timelapse.cfg]
27 View include documentation
28 [include MKS_THR.cfg]
29 View include documentation
30 [include Adaptive_Mesh.cfg]
31 View include documentation
32 [mcu]
33
34 # The hardware use USART1 PA10/PA9 connect to RK3328
35 #serial: /dev/serial/by-id/usb-Klipper_stm32f407xx_4D0045001850314335393520-1f00
36 serial: /dev/ttyS0
37 restart_method: command
38
39
40 #[mcu MKS_THR]
41 #serial:/dev/serial/by-id/usb-Klipper_rp2040_DSCEAD9543D14858-1f00
```

### (5) Modify moonraker.cfg file

Add the following code:

[timelapse]

## Following basic configuration is default to most images and don't need  
## to be changed in most scenarios. Only uncomment and change it if your  
## Image differ from standart installations. In most common scenarios  
## a User only need [timelapse] in their configuration.

#output\_path: ~/timelapse/

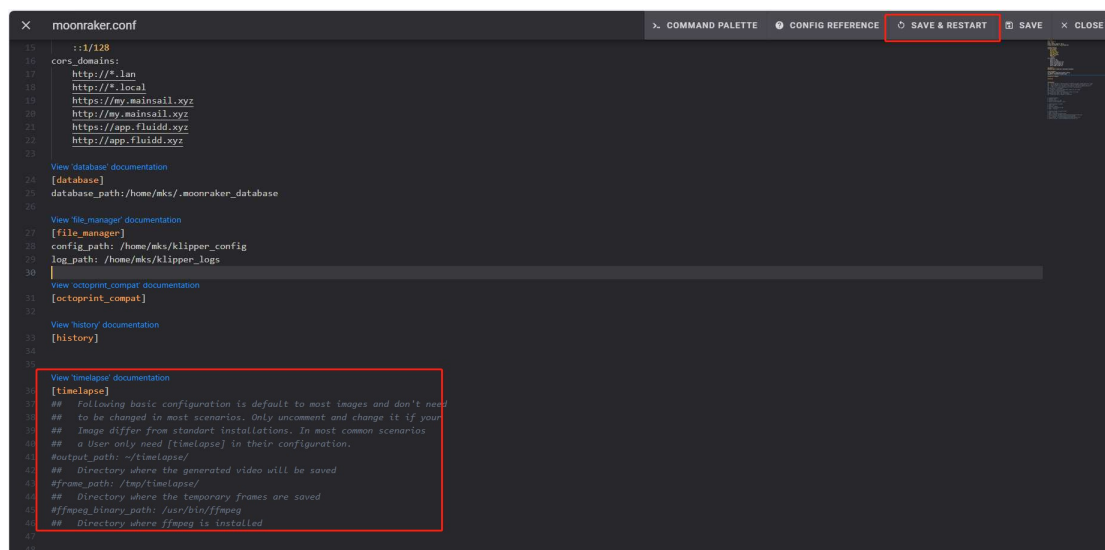
## Directory where the generated video will be saved

#frame\_path: /tmp/timelapse/

## Directory where the temporary frames are saved

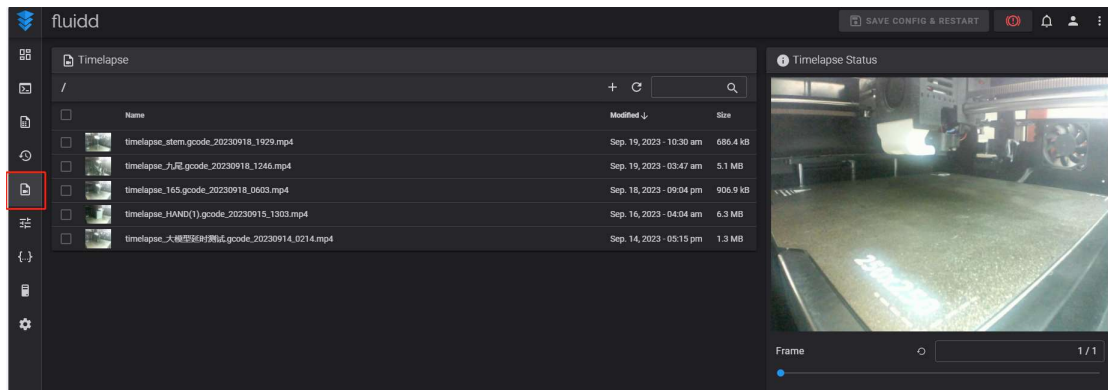
#ffmpeg\_binary\_path: /usr/bin/ffmpeg

## Directory where ffmpeg is installed



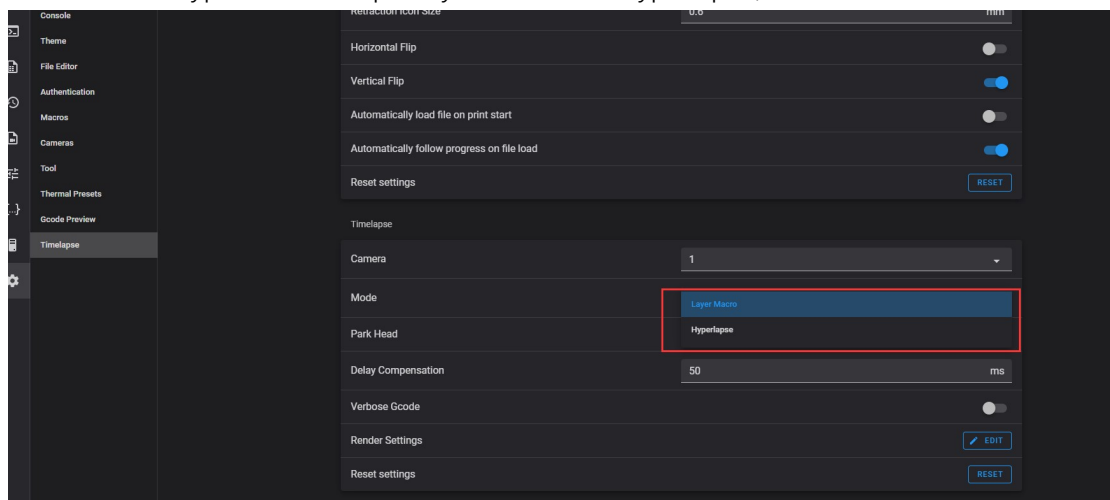
```
15 :1/128
16 cors_domains:
17 http://*.lan
18 http://*.local
19 https://my.mainsail.xyz
20 http://my.mainsail.xyz
21 https://app.fluidd.xyz
22 http://app.fluidd.xyz
23
24 View database documentation
25 [database]
26 database_path: /home/mks/.moonraker_database
27
28 View file_manager documentation
29 [file_manager]
30 config_path: /home/mks/klipper_config
31 log_path: /home/mks/klipper_logs
32
33 View octoprint_compat documentation
34 [octoprint_compat]
35
36 View history documentation
37 [history]
38
39 View timelapse documentation
40 [timelapse]
41 ## Following basic configuration is default to most images and don't need
42 ## to be changed in most scenarios. Only uncomment and change it if your
43 ## Image differ from standart installations. In most common scenarios
44 ## a User only need [timelapse] in their configuration.
45 #output_path: ~/timelapse/
46 ## Directory where the generated video will be saved
47 #frame_path: /tmp/timelapse/
48 ## Directory where the temporary frames are saved
49 #ffmpeg_binary_path: /usr/bin/ffmpeg
50 ## Directory where ffmpeg is installed
```

(6) If you've completed the above steps, you'll see an additional time-lapse option on the left side of the page **after reboot**. The time-lapse feature has been successfully installed!



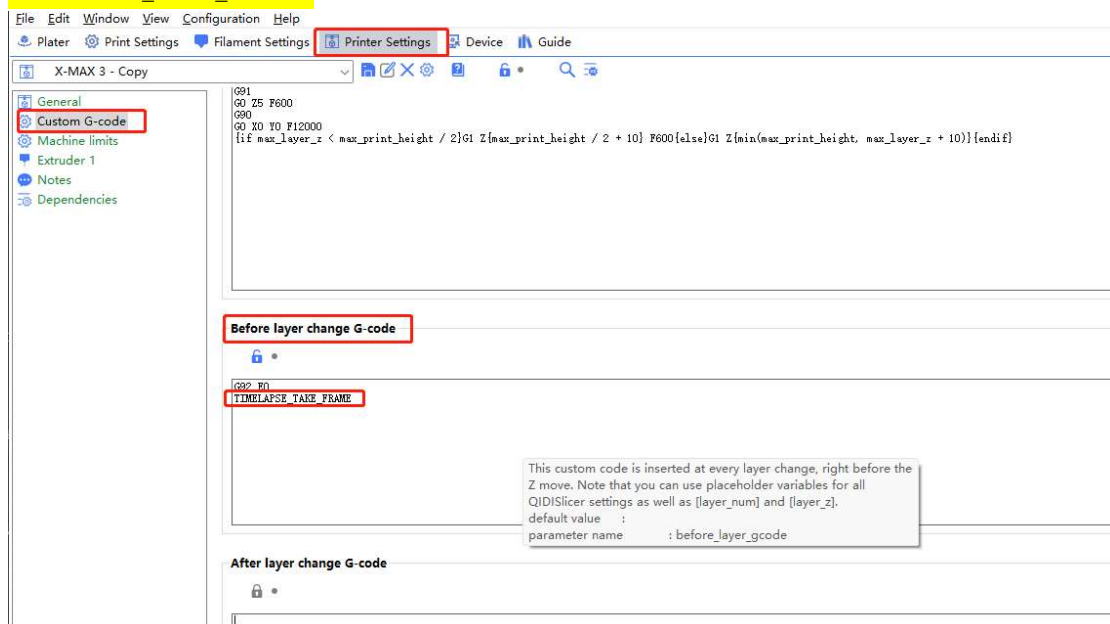
## (7) Introduction to the time-lapse function

There are two types of time-lapse: layer macro and hyperlapse,

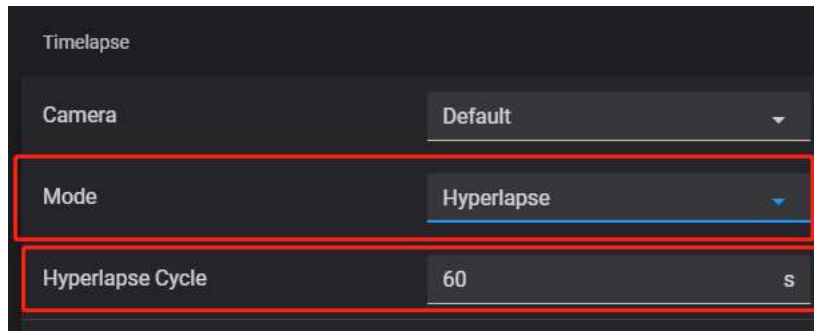


Layer Macro mode, You need to add a line of G-code before the layer change in the slicing software.:

### TIMELAPSE\_TAKE\_FRAME



Hyperlapse mode is simply a time loop that indicates a cycle of shooting at a certain time, and when you select this mode on the page, there will be an additional Hyperlapse Cycle option where you can choose the interval between shots.



The image shows a settings menu for a 'Timelapse' feature. It has a dark background with white text. The menu is titled 'Timelapse' at the top. Below the title, there are three settings, each with a label on the left and a value on the right. The first setting is 'Camera' with a value of 'Default'. The second setting is 'Mode' with a value of 'Hyperlapse'. The third setting is 'Hyperlapse Cycle' with a value of '60' and a unit 's' (seconds). Red rectangular boxes are drawn around the 'Mode' and 'Hyperlapse Cycle' settings to highlight them.

| Timelapse        |            |
|------------------|------------|
| Camera           | Default    |
| Mode             | Hyperlapse |
| Hyperlapse Cycle | 60 s       |