



OctoPrint on M3D

Created by Ruiz Brothers



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Overview



M3D Software

In this guide, you'll learn how to use OctoPrint with the Micro M3D. The Micro 3D ships with M3D slicing software, which requires a tethered USB connection. OctoPrint allows the Micro to run off a Raspberry Pi, essentially putting it on the WiFi networking, allowing remote hosting. With the M3D Fio plugin for OctoPrint, you can calibrate settings, level the bed and manage print jobs.

M3D Fio

The [M3D-Fio plugin for OctoPrint \(https://adafru.it/kGA\)](https://adafru.it/kGA) is developed by GitHub user [donovan600 \(https://adafru.it/kGB\)](https://adafru.it/kGB). The plugin is a great alternative to the M3D official software if you're looking to manage the Micro remotely. It's easy to install and works with OctoPrint's autodesk serial port and baudrate feature. M3D Fio allows you slice STLs, calibrate, load/unload filament, update firmware, manage EEPROM and more.r.

Parts

If you're an own of the Micro M3D printer, you can get the parts below to get OctoPrint up and running.

- [Raspberry Pi B+/2 \(http://adafru.it/2358\)](http://adafru.it/2358)
- [WiFi dongle \(http://adafru.it/814\)](http://adafru.it/814)
- [Class 10 micro SD card \(https://adafru.it/kGC\)](https://adafru.it/kGC)
- [microUSB 5V power supply \(http://adafru.it/1995\)](http://adafru.it/1995)

We also carry an [OctoPrint pack \(http://adafru.it/2896\)](http://adafru.it/2896) that has everything you need. It also ships with a preflashed SD card with the OctoPrint image for Raspberry Pi.

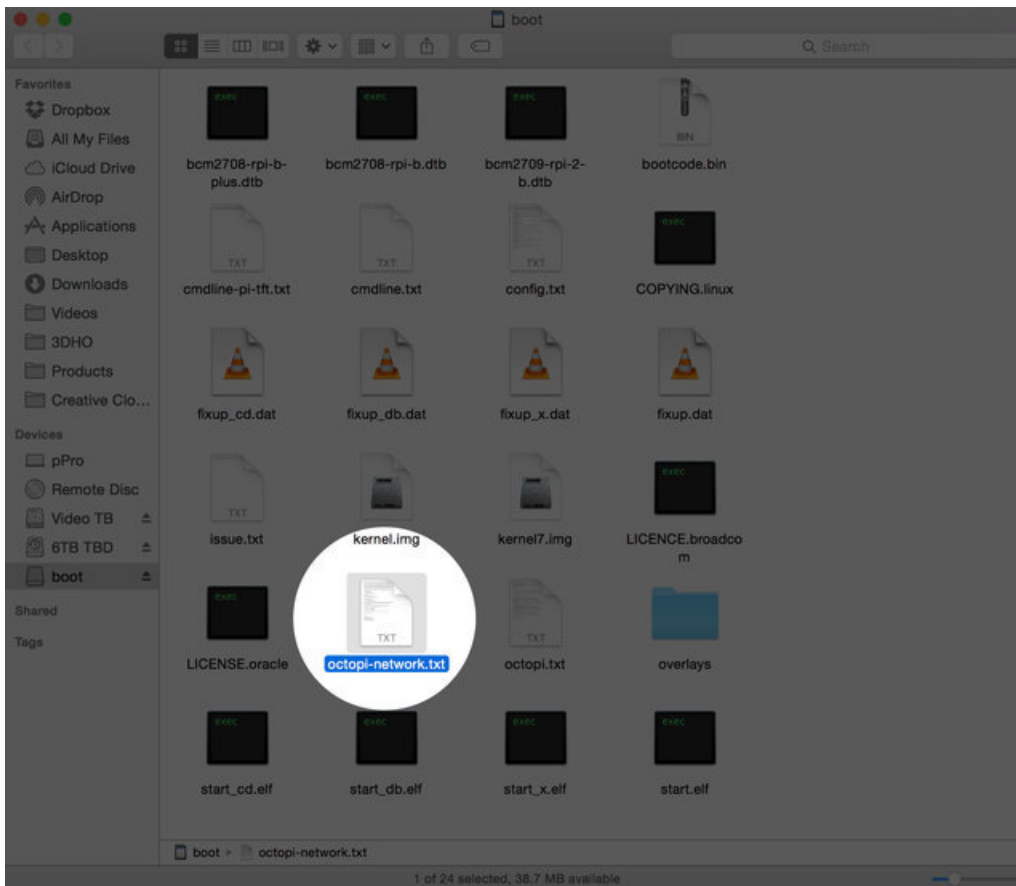
OctoPrint Set up

To get started, we need to burn the OctoPrint image to an SD card. You can download the image using the link below and use an image burning app to burn it to an SD card. You can get a list of image burning apps and burning instructions here: http://elinux.org/RPi_Easy_SD_Card_Setup (<https://adafru.it/aMW>)

The OctoPrint pack comes with OctoPi preburnt to the SD card.

<https://adafru.it/kGD>

<https://adafru.it/kGD>



Enter WiFi Settings

Before we boot up the Raspberry Pi, you'll need to add your WiFi credentials to the **octopi-network.txt** file so it can connect to your network. Insert the SD card into your computer's card reader and locate the file named **octopi-network.txt**, it's in the root directory.

```
octopi-network.txt — Edited
# You can use this file to manually set up your network configuration.
#
# This file is included into /etc/network/interfaces, so anything that
# works by editing that file is also possible here.

### WIFI CONFIGURATION #####
# The three segments below should cover you in most cases if you run
# a wifi network that uses either WPA/WPA2 or WEP encryption.
#
# Just uncomment the lines prefixed with a single # of the configuration
# that matches your wifi setup and fill in SSID and passphrase.

## WPA/WPA2 secured
iface wlan0 inet manual
    wpa-ssid "put SSID here"
    wpa-psk "put password here"

## WEP secured
#iface wlan0 inet manual
#    wireless-essid "put SSID here"
#    wireless-key "put password here"

## Open/unsecured
#iface wlan0 inet manual
#    wireless-essid "put SSID here"
#    wireless-mode managed

### WIRED CONFIGURATION #####
# The following segment allows you to configure your wired connection
# with a static IP.
#
# Just uncomment the lines prefixed with a single #. Then connect
# a cable to the Pi and another system, e.g. a Laptop, and set that
# other system's network configuration to:
#
#    address: 192.168.250.10
#    netmask: 255.255.255.0
#    broadcast: 192.168.250.255
#
# You can then reach the Pi from the system's browser by going to
#
#    http://192.168.250.1
#
# or
#
#    http://octopi.local

#auto eth0:1
#iface eth0:1 inet static
#    address 192.168.250.1
#    netmask 255.255.255.0
#    broadcast 192.168.250.255
```

OctoPi Network Config

Open the `octopi-network.txt` in a text editor. Here we can enter our wifi credentials.

Look for the type of wifi network you have setup and enter your network's name and password.

Remove the hashtag symbols from your wifi option like shown in the photo.

Save the config and close the file.

Boot Up Raspberry Pi

Eject and remove the SD card from your computer and insert it into the Raspberry Pi. Plug in the microUSB cable from your power supply to the Raspberry Pi and it should automatically boot up.

```

[ ok ] Setting up ALSA...done.
[info] Setting console screen modes.
[info] Skipping font and keymap setup (handled by console-setup).
[ ok ] Setting up console font and keymap...done.
[ ok ] Setting up X socket directories... /tmp/.ICE-unix.
INIT: Entering runlevel: 2
[info] Using makefile-style concurrent boot in runlevel 2.
Error opening "/dev/urandom": No such file or directory
[ ok ] Network Interface Flushing Daemon...skip eth0...skip wlan0...done.
[ ok ] Starting Octoprint Daemon: Octoprint.
[ ok ] Starting Webcam Daemon: webcamd.
[info] Initializing cgroups.
[warn] Kernel lacks cgroups or memory controller not available, not starting cgroups. ... (warning).
[... ] Starting haproxy: haproxy[6089186] 610.155513 (1954) : Setting tune.ssl.default-dh-param to 1024 by default, if your workload permits it you should set it to at least 2048. Please set a value >= 1024 to make this warning disappear.
. ok
[ ok ] Starting enhanced syslogd: rsyslogd.
Starting dhcpcd-swapfile swapfile setup ...
want /var/swap=100MByte, checking existing: keeping it
done.
[ ok ] Starting NTP server: ntpd.
[ ok ] Starting periodic command scheduler: cron.
[ ok ] Starting system message bus: dbus.
[ ok ] Starting OpenSSH Secure Shell server: sshd.
[ ok ] Starting sshd sshd@raspi: sshd-daemon.
dhcpcd[1539]: version 6.7.1 starting
dhcpcd[1539]: all: IPv6 kernel autoconf disabled
dhcpcd[1539]: eth0: adding address fe80::ec37:29a9:c045:a444
dhcpcd[1539]: if_addraddress6: operation not supported
dhcpcd[1539]: all: IPv6 kernel autoconf disabled
dhcpcd[1539]: wlan0: adding address fe80::65c2:42bf:1654:6338
dhcpcd[1539]: if_addraddress6: operation not supported
dhcpcd[1539]: eth0: waiting for carrier
dhcpcd[1539]: BUID 00:01:00:01:1c:dd:67:29:00:e0:4c:00:b0:e9
dhcpcd[1539]: wlan0: IUD 4c:00:b0:e9
dhcpcd[1539]: wlan0: rebinding lease of 10.1.10.7
dhcpcd[1539]: wlan0: leased 10.1.10.7 for 604000 seconds
dhcpcd[1539]: wlan0: adding route to 10.1.10.0/24
dhcpcd[1539]: wlan0: adding default route via 10.1.10.1
dhcpcd[1539]: forked to background, child pid 2400
My IP address is 10.1.10.7

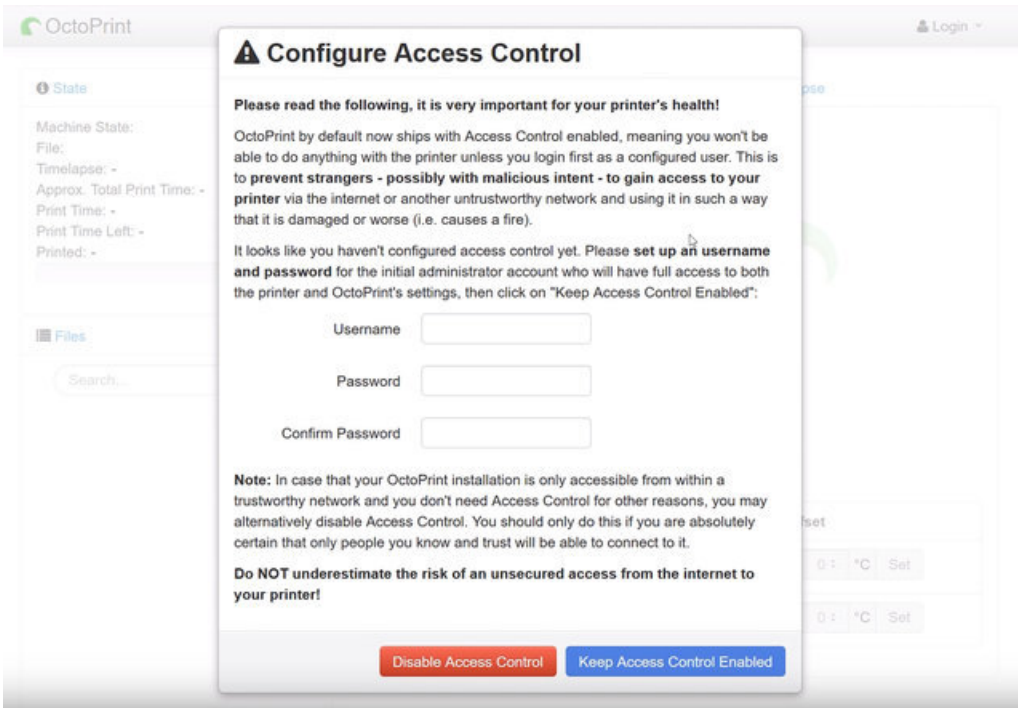
Raspbian GNU/Linux 7 octopi tty1
octopi login: _

```

Connect to OctoPrint webpage

If you have a display connected to your Raspberry Pi, the IP address will show up in the terminal. Take a note of the IP address and enter that into the URL box in your web browser.

If you don't have a display connected to the Raspberry Pi, you can try hitting <http://octopi.local/>

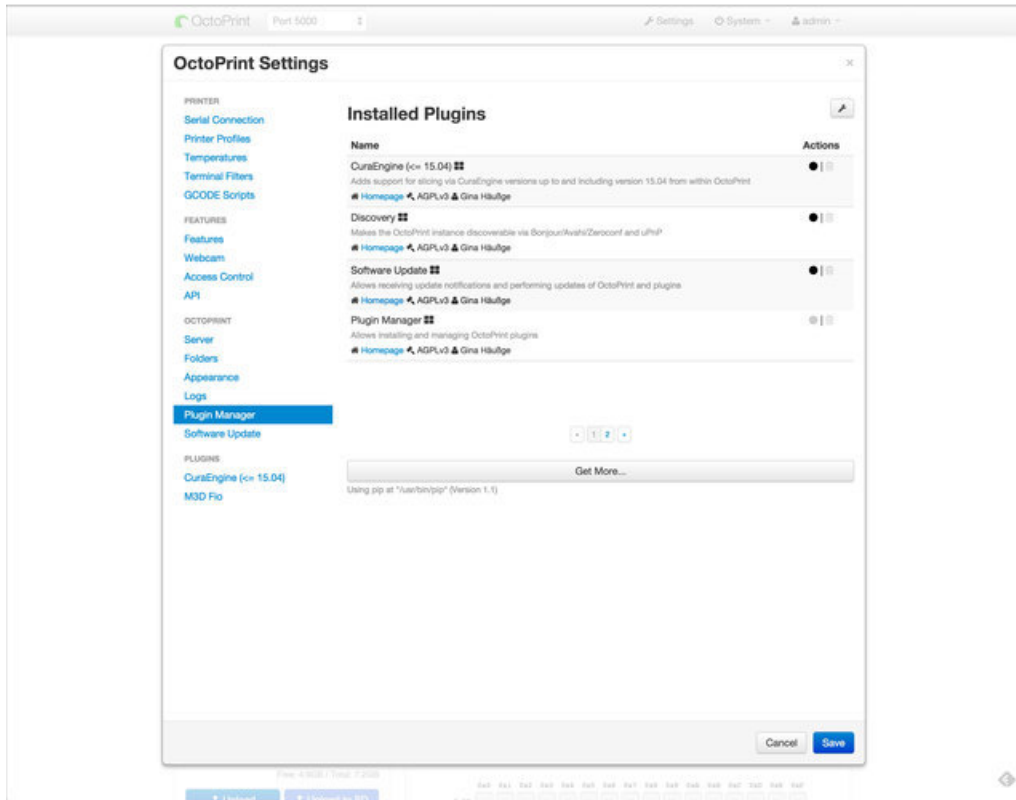


Setup OctoPrint Admin Login

OctoPrint will prompt you choose a the username and password for accessing the interface. We recommend reading

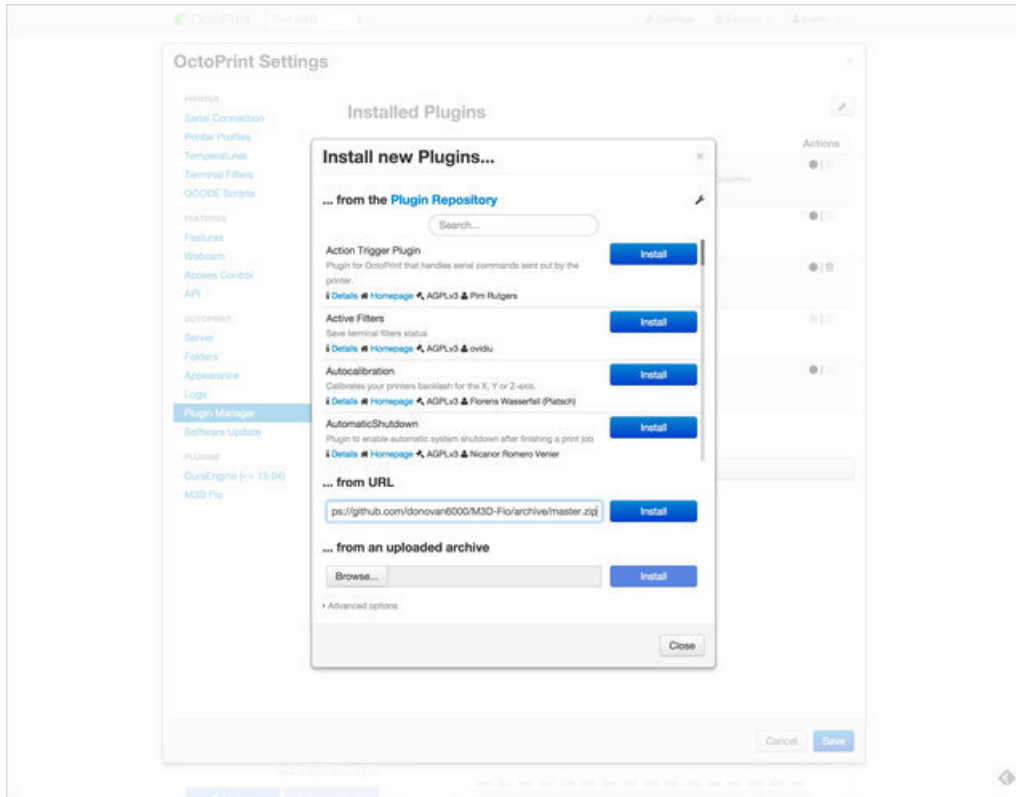
the description and choosing to "**Keep Access Control Enabled**". Choose a username and password and enter it into access window. Next, we need to install the M3D Fio plugin - this will communicate with the M3D printer.

Add M3D-Fio



Add M3D-Fio Plugin

Now we can install the M3D-Fio plug that allows you to control the M3D printer. In the top menu bar, click on **Settings** to open the **Plugin Manager**. Then, click on the **"Get More"** button.



Search for M3D-Fio in the search field and click on the **Install** button.

If the plugin doesn't appear, enter the M3D-Fio address in to the "...from URL" textfield. The address to install the plugin is:

<https://github.com/donovan6000/M3D-Fio/archive/master.zip> (<https://adafru.it/kGE>)

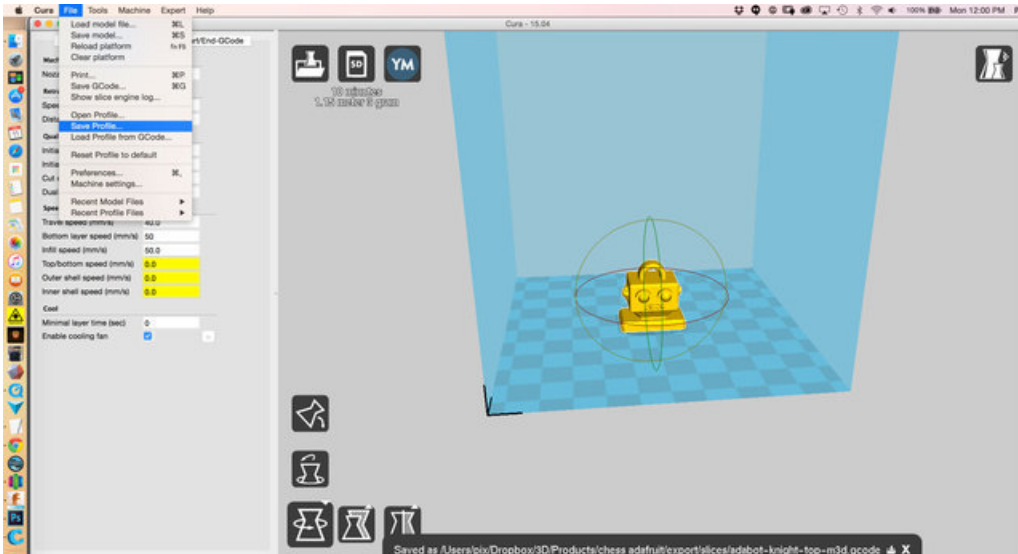
Click **Install** to begin the installation process. Once the plugin is installed, you'll be asked to **restart** OctoPrint to use M3D-Fio plugin.

Using Custom CURA Profiles

The M3D-Fio plugin includes a variety of different material settings. If you find yourself needing to edit profiles for different materials or choosing specific quality settings, you are free to customize your profiles! You can start with our base profile to edit from, which you can download load it blow:

<https://adafru.it/kGF>

<https://adafru.it/kGF>

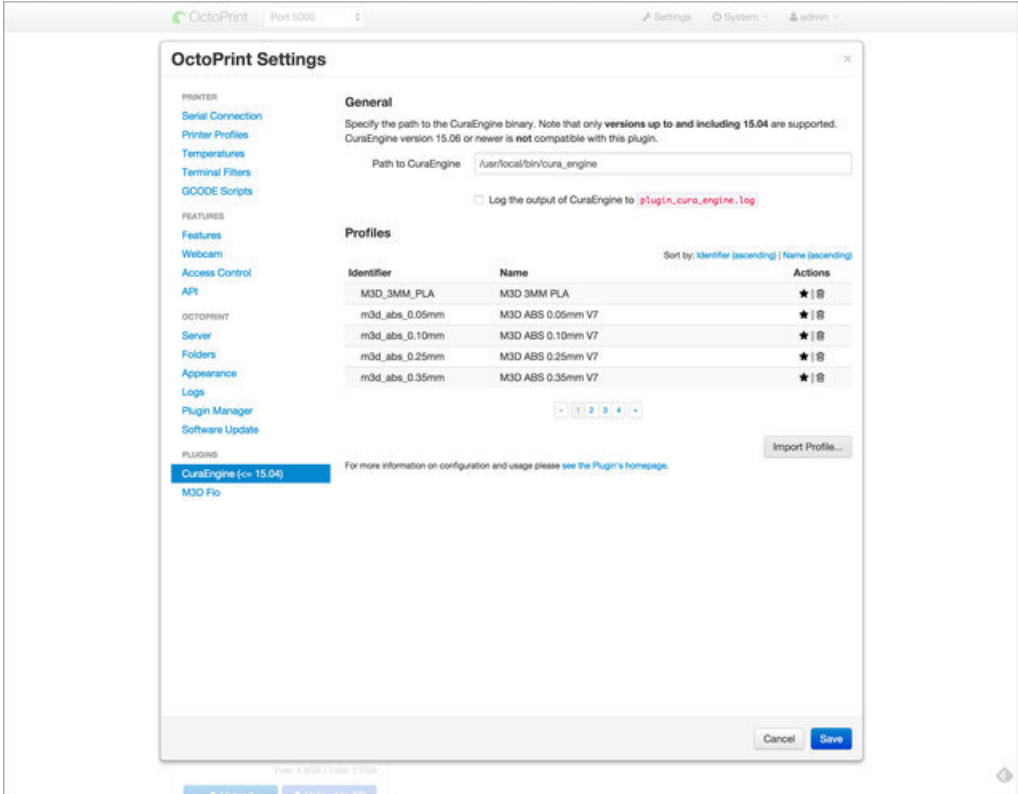


To export profiles that can run inside OctoPrint, use Cura 15.04 (<https://adafru.it/kHa>) to export profiles and then import them into OctoPrint.

Note newer versions of Cura do not support other printers, you'll want to use version 15.04

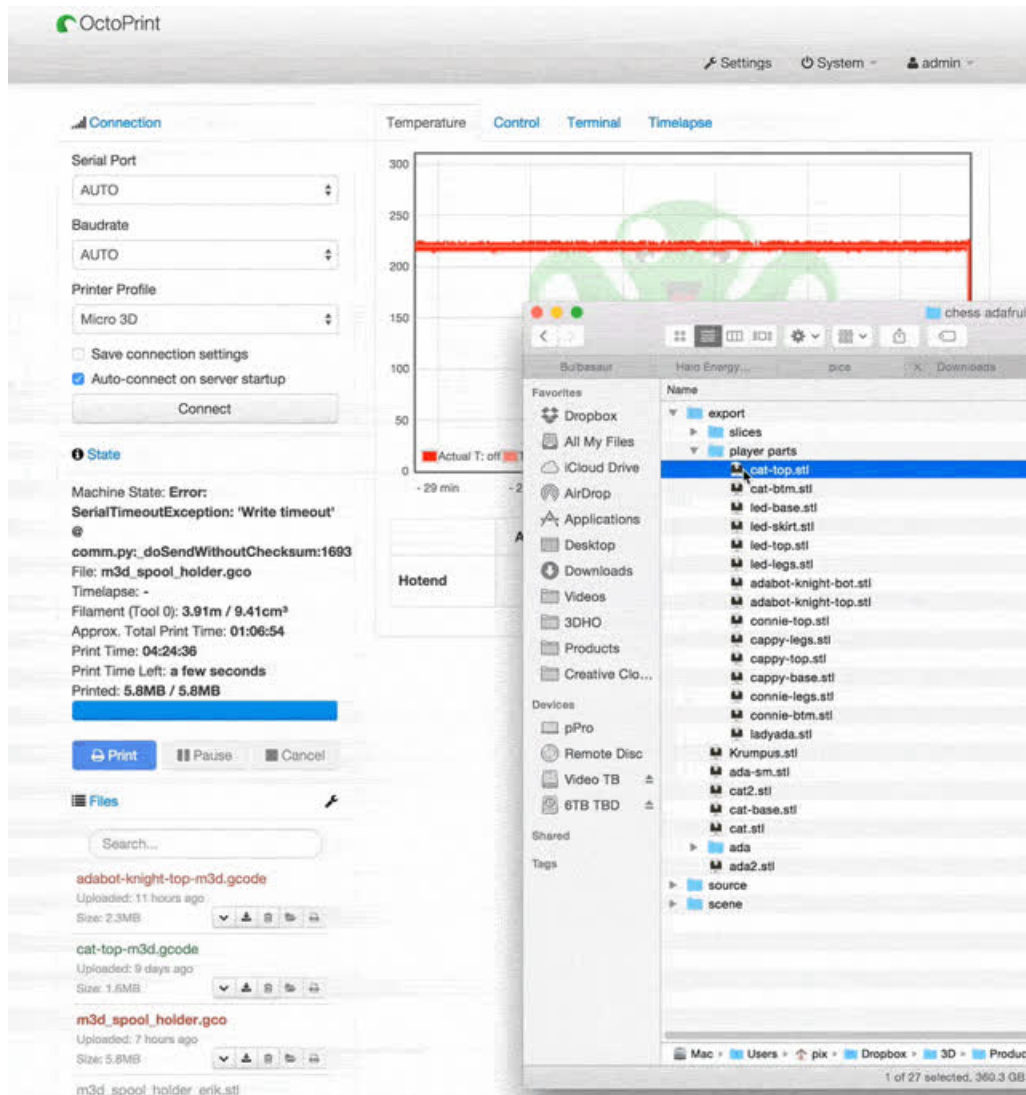
<https://adafru.it/kHa>

<https://adafru.it/kHa>



Adding custom Cura Profiles

From the menu bar, click on **Settings**, then **CuraEngine** on the left sidebar to add custom profiles. Add a name and description to the profile and you'll be able to select it next time you drag an STL file onto the UI.



Slice and Print!

To slice an STL file, just drag and drop it into the OctoPrint UI.

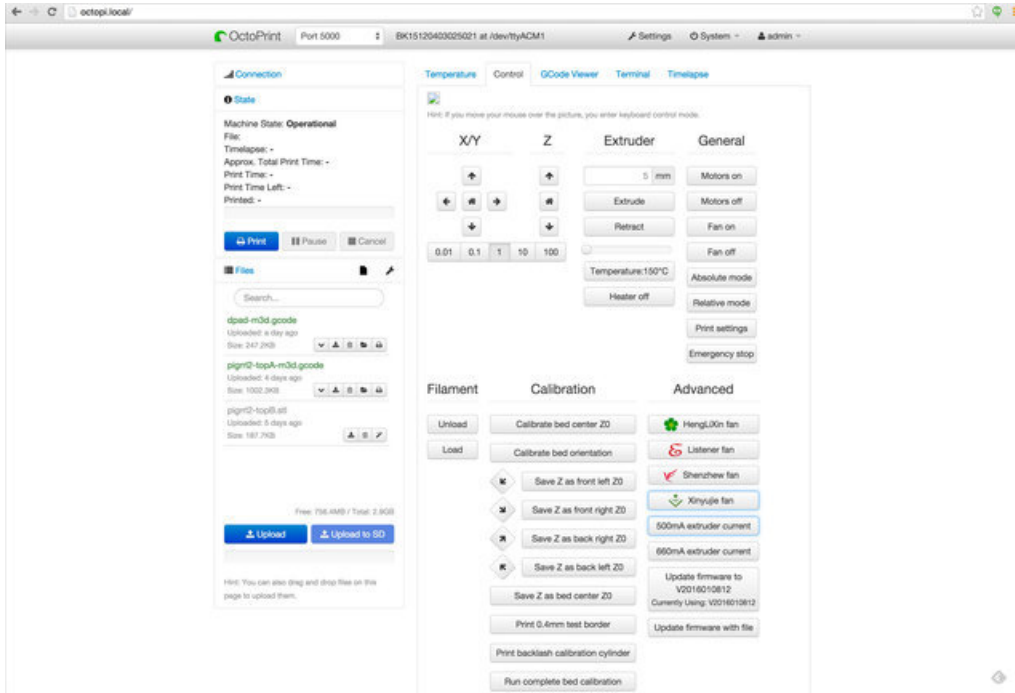
Choose your material profile and name for the gcode file. Select whether or not you'd like the print to start right away.

Once the **"Modify Profile"** window pops up, you are free to edit the text settings for each attribute before confirming the slice settings.

Inside the **Modify Model** window, we can position, rotate or clone objects before printing. Click **Slice** to process your model.

Slicing on the Raspberry Pi can take a few seconds to a couple of minutes depending on the size and complexity of the model.

After slicing is complete you can start the print!



Filament and Calibration

Loading filament

To load and unload filament, click on the **"Control"** tab to access the **Unload** and **Load** buttons. Under the **Filament** column you can see the the buttons for **Unload** and **Load**. Select the operation you'd like, the nozzle will warm up and then start extruding or retracting.

You can also heat up the nozzle first and then type in a length (about 60mm to load or unload filament) to extrude or retract under the **Extruder** column.

Calibration

Click on the **"home"** icon button under **X/Y**. The extruder will move to the back and to the right to find the orientation of the bed before resting above the middle of the bed.

We can use a piece of paper to gauge the height of the nozzle. Lower the nozzle by clicking on the 1mm button first. Under the **Z** column, click the down arrow once or twice, until it almost touches the piece of paper. Under the **Calibration** column, click on the **.01** and then on the down button under the **Z** column until the nozzle grips onto the piece of paper.

Click on the **"Save Z as 0"** to save the nozzle height.

Now you can level each corner by clicking on diagonal **arrow buttons** for each corner. Repeat lowering the nozzle by 1mm then .01mm until it slightly grips the piece of paper for each corner. Don't forget to click the **Save Z** buttons for **front left**, **front right**, **back right** and **back left** after leveling each corner.

