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Octoprint setup on MK4/S, MK3.9/S, MK3.5/S, XL, CORE

help.prusa3d.com/g646395

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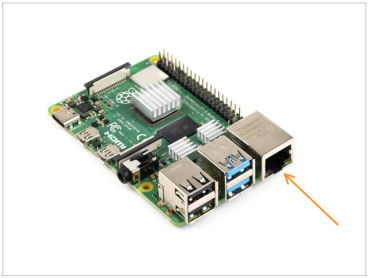
STEP 1 Introduction



- In this guide, we will get **Octoprint** running on the **Raspberry Pi 4** board and connect it to your new generation Prusa printer using USB.

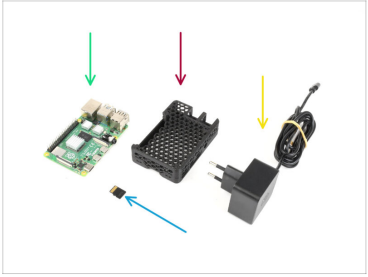
  Octoprint is a 3rd-party alternative to PrusaLink, the wireless printing solution.

  - Starting with Octoprint on other machines such as the **MK2.5/S, MK3/S/+** or **MINI/MINI+** or **CORE** is fairly similar with only a few minor differences such as the USB connector position and type required. (USB-B for i3 series and microUSB for MINI/+) If you plan to use one of these printers instead, consider visiting the Octoprint configuration and install article instead.

This guide is intended for experienced users. Check About Octoprint article to learn more about the software.

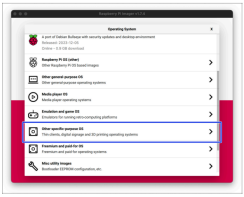
Since we develop neither Raspberry Pi nor Octoprint, we are only able to provide **limited support** on its use. Also, connection-issues is more likely a configuration-error with your PI or home-router, which unfortunately is also not our field.

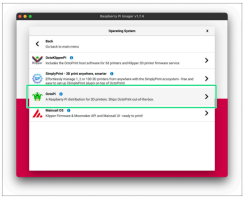
STEP 2 Parts preparation: Raspberry Pi



- **For the following steps, please get:**
- **Raspberry Pi** (RPi) model **3, 3+ or 4** board.
  - Get **RPi 4B** from our e-shop.
- **Raspberry Pi case** of your choice. (you can for example print one from Printables.com)
- Corresponding Raspberry **Pi power supply** (available on our e-shop). (Pi model 3 uses microUSB while the model 4 uses USB-C plug)
- **MicroSD card.** (8GB or larger SDHC card, Class10, preferably a name brand one)
- **USB A to USB C** cable (available on our e-shop)

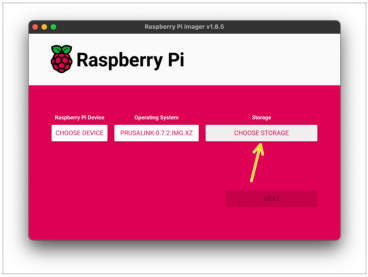
STEP 3 Preparing necessary software

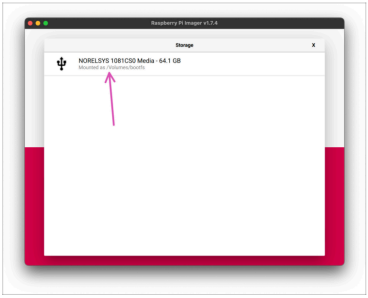




- Download and install Raspberry Pi Imager from raspberrypi.org/software
- Chose the RPi type you're going to use.
- Hit the **CHOOSE OS.**
- Navigate to **Other specific-purpose OS > 3D Printing**
- Click **OctoPi** and select a version. We recommend using the latest stable version.

STEP 4 Setting up the SD card in Pi Imager



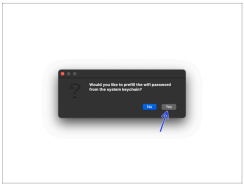


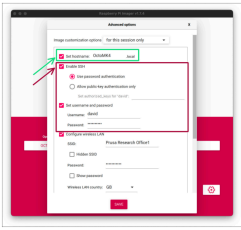
- Insert an empty **micro SD Card** into your computer.

  Note that any data that might be present on the SD-card will be deleted.

- Click **CHOOSE STORAGE.**
- Select the micro SD card in the list.

STEP 5 Setting up the SD card in Pi Imager 2

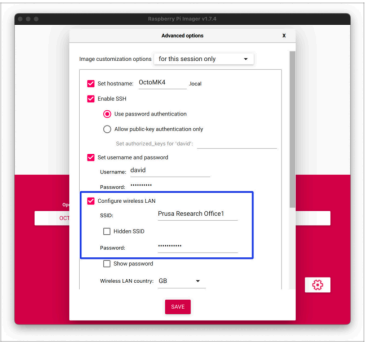




- Edit the OS customisation settings.
- You might be prompted to prefill the wifi password from the system keychain. Click Yes if you plan to use the same wifi network on your Pi.
- You can set a hostname. Preferably, use a unique hostname for the given printer. - Use just plain text with no special characters.
- A hostname will allow you to access the printer more easily by typing just **http://OctoMK4.local** into your browser instead of the printer's IP address.

  Depending on your local network settings, the hostname might not work and you might need to use the IP Address instead.
- Enable SSH and set the device username and password for additional security.

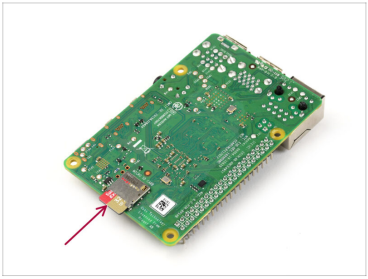
STEP 6 Setting up the SD card in Pi Imager 3

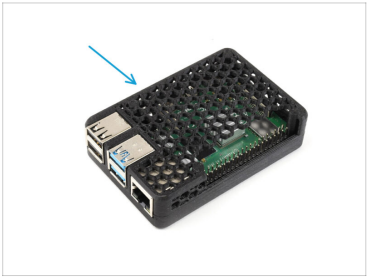


- **Configure wireless LAN (Wi-Fi)** if you plan to use the wireless network.
  - Set the SSID (the name of the local Wi-Fi network you are using) and Password, if necessary.
- Save the settings, hit **WRITE** and confirm formatting of the micro SD card.

Follow the instructions in the **Pi Imager app** only. Don't follow your operating system's notifications about the microSD Card and its formatting if there are any.

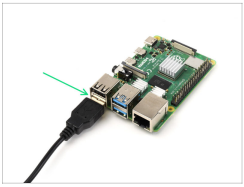
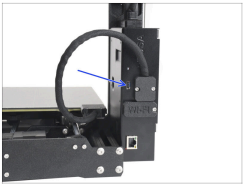
STEP 7 Inserting the SD card





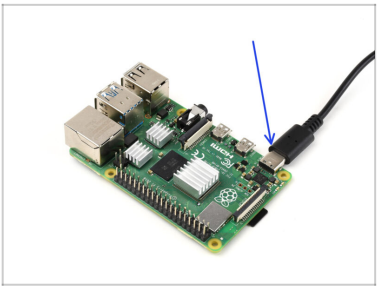
- After the Octoprint image has been successfully written onto the SD card, remove it from the computer.
- Insert the **microSD card with the image** into the Raspberry Pi.
- Install the Raspberry Pi into a protective cover.

STEP 8 Connecting the RPi to the printer

- Take the USB-A to USB-C cable.
  - Connect the **USB-A** part into one of the USB ports on the Raspberry Pi.
  - Connect the **USB-C** part into the back of the electronics box on the printer.
    - ⓘ Note that there is the **MK4** printer shown in the picture. On the Original Prusa **XL**, there is a USB-C plug too, in the middle of the electronics box.

STEP 9 Powering up the Raspberry Pi

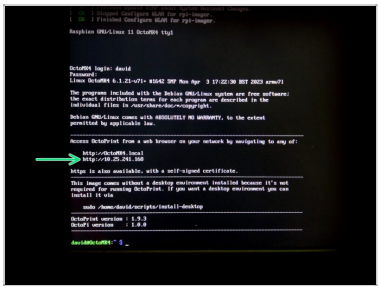


- **Turn on the printer.**
- Connect the **Raspberry Pi power supply.**

The RPi / Octoprint should now power on and **connect to your local network.**

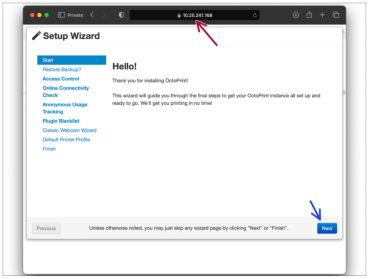
The first start can take a while. Wait until it boots up.

STEP 10 Finding out the IP Address



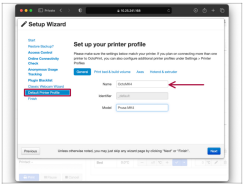
- In order to connect to Octoprint, we need to know either a **Hostname** you set earlier or know an **IP address**.
- Since, the Hostnames (.local) might not work on all local networks, you might need to find out an IP address using one of the following techniques:
  - Access you router's control / setup page and find the IP address there.
  - Use a network scanner app such as Fing.
  - Plug in a monitor and a keyboard to the RPi. Since, the OctoPi is essentially a Raspbian Linux distribution, you can log in and use the **ifconfig** command to find out the network details.
    - Without an SD card, the RPi will open up a BIOS-like screen on the monitor and show you the Ethernet MAC address. The MAC address can be used to find out the IP address of the device.

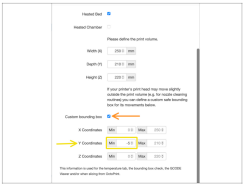
STEP 11 Octoprint Wizard setup



- Insert the **Hostname** (.local) or the **IP address** into your web browser and open it up as a webpage.
- The Octoprint Wizard will show up.
  - Hit Next and continue to configure the required settings.
  - In the Access Control part, set up the Octoprint **Username and Password**.

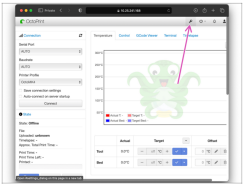
STEP 12 Printer profile setup

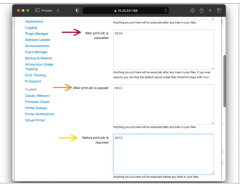




- In the **Default Printer Profile** part, set a name of your printer.
- Proceed to **Print bed & build volume** tab.
  - Set the X, Y, Z build volume parameters to the corresponding values:
    - **250, 210 and 220**mm for the **Original Prusa MK4** printer
    - **360, 360, 360**mm for **Original Prusa XL**
- Select the **Custom Bounding Box** option.
- Set the **Y Coordinates Min.** value to:
  - **-5** for the **Original Prusa MK4** printer
  - **-8** for the **Original Prusa XL** printer
- **Finish** the wizard.

STEP 13 Setting up special G-codes

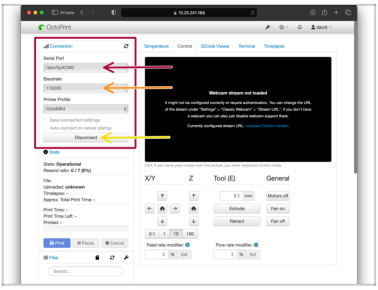


- Once you finish the Wizard and get to the **Octoprint dashboard**, open up the **Settings** by clicking the wrench icon on top.
- Navigate to the **GCODE Scripts** section.
- Edit these three items:
  - After print job is cancelled: **M604**

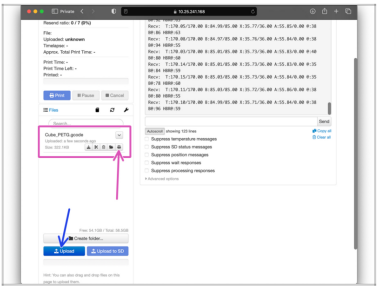
    Note that this used to be M603 for MK3 (This used to be our custom gcode command). Meanwhile, Marlin introduced its own M603 that serves a completely different function. So, now the print job-cancelling gcode is M604 to avoid collision with the marlin's gcode.
  - After print job is paused: **M601**
  - Before print job is resumed: **M602**
- Save the entered settings.

STEP 14 Connecting the Octoprint to the printer



- Once back on the Octoprint dashboard, navigate to the **Connection** column. Select the **Serial port** your printer has been detected on.
- Select a **Baud rate** (communication speed). The default value is **115200**.
- Hit **Connect** so that the Octoprint initialies a communication with the printer.

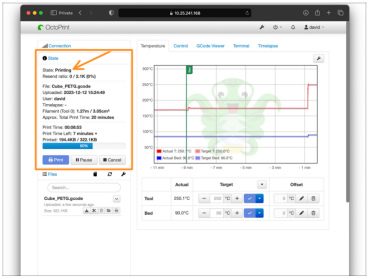
STEP 15 Uploading a G-code and starting a print



- Navigate to the **Files** column.
- **Upload a G-code** file you wish to print either by selecting or drag-and-dropping it.

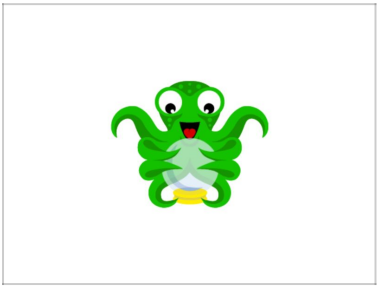
  ⓘ Note that the space-efficient binary G-codes (.bgcode files) aren't yet supported by the Octoprint without an extra plugin.
- Find the G-code file on the list above and select **Load and print** icon to start printing it.

STEP 16 Printing using Octoprint



- The printer should now start printing the file. The process can be monitored on the Octoprint dashboard.
- The ongoing print manifests itself via this **cute octopus** image on the printer's LCD and the corresponding SERIAL PRINTING screen offering you a basic control.

STEP 17 A few extra notes



⚠ Please note that some of the printer's functions might not work while using it with Octoprint:

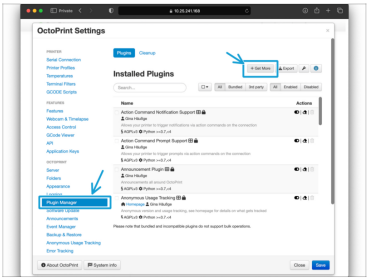
- Crash detection
  - Power Panic functionality
  - Info about Heat Absorbing process on the **XL** is not displayed; and its not possible to skip it.
  - Multitool printing via octoprint.
  - bgcode format

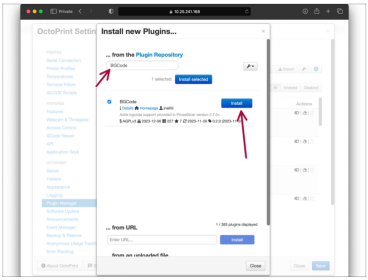
ⓘ Octoprint is available on your local network only. Also, the IP Address is being assigned to it by your local router and might be changing in the future.

If you have suggestions you would like to share with fellow users such as tip for a useful plugin; feel free to leave a comment below, or start a discussion thread on Prusa forum at forum.prusa3D.com.

- If Octoprint doesn't suit your needs, feel free to check out the other solutions to wireless printing and printer control; PrusaLink and Prusa Connect.

STEP 18 Optional: Installing Plugins





- You may want to install some plugins in order to fully utilise the Octoprint's capability.
  - Open **Settings > Plugin Manager** and select **+ Get More**
  - Search for a plugin and select **Install.**
- **Plugins that users frequently recommend:**
  - **- BGCode** by jneilliii

Which plugins do you use? Leave a note in the comments!

See also: Camera setup(PrusaLink)

Notes:

Notes:

Notes:

Notes: