

# STACKER

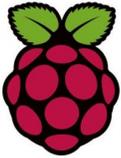
## INDUSTRIAL GRADE 3D PRINTERS

### Installation of Repetier-Server on a Raspberry Pi

The follow instructions<sup>1</sup> are intended to assist a Stacker operator with the installation of Repetier-Server onto a Raspberry Pi. *These instructions are provided only as a guide* and they presume



a basic knowledge of both computer hardware and the LINUX operating system. Neither the Raspberry Pi nor the LINUX operating system are covered by your Stacker warranty. Stacker's customer support does not extend to third-party products.



The Raspberry Pi is a low-cost credit card-sized single-board computer developed in the United Kingdom by the Raspberry Pi Foundation (<https://www.raspberrypi.org/>). Repetier-Server (<https://www.repetier-server.com/>) is software which enables the remote operation of your Stacker 3D printer using any web enabled device such as a smart phone, tablet or desktop computer. Although Repetier-Server is free, we strongly encourage you to either purchase the Pro version or provide a donation to Repetier. Find the donation button at the bottom of the download page <https://www.repetier-server.com/download-repetier-server/>

#### Before you begin, you will need:

- Raspberry Pi (preferably the Raspberry Pi 3 Model B)
- Power supply (5v 2Amp)
- 8GB or larger MicroSD card (class 10 recommended).
- Monitor or TV with an HDMI input
- HDMI cable
- Mouse
- Keyboard
- LAN (local area network) with WiFi or Cat5 cable



*Please Note: Some users have experienced problems with their Raspberry Pi due to inadequate power supply, unsupported microSD cards, or incompatible Wi-Fi adapters which are not plug*

<sup>1</sup> Last Updated 24 October 2016. If you have any suggestions to help improve these instructions, please let us know at [info@stacker3d.com](mailto:info@stacker3d.com).

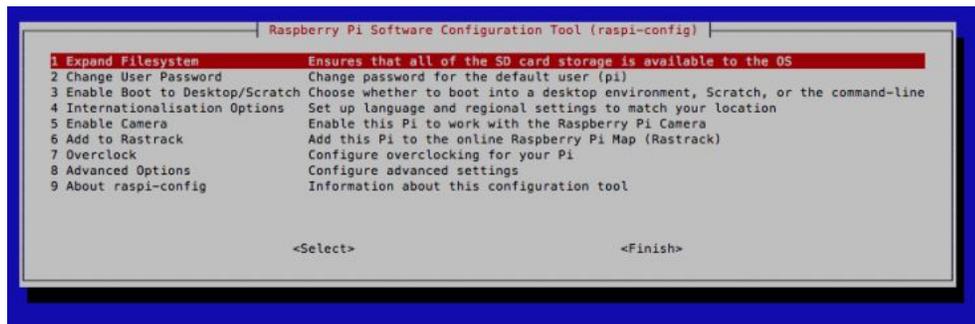
and play. There are many Raspberry Pi kits and accessories on the market. Make sure to do your own research and read reviews before purchasing a Raspberry Pi and its accessories.

### Step 1: Install Raspbian onto your microSD card

1. Download the latest Raspbian image file to your computer:  
[http://downloads.raspberrypi.org/raspbian\\_latest](http://downloads.raspberrypi.org/raspbian_latest)
2. After downloading the .zip file, unzip the file to get the image file (.img).
3. To write the image to your microSD card, follow the instruction found on <https://www.raspberrypi.org/documentation/installation/installing-images/README.md>
  - a. For Windows users, you will need to download [Win32DiskImager](#)
  - b. With Win32DiskImager software, write the Raspbian image to the microSD card (always double check and make sure you select the correct drive when writing an image file!)

### Step 2: Setup the Raspberry Pi

1. Now that the image is written to the microSD card, insert the card into the Raspberry Pi and connect a keyboard, mouse, and monitor.
2. Connect the power supply, which will boot your Raspberry Pi (note the red and green lights).
3. Open the terminal and type the command **sudo raspi-config**.



4. Within the Configuration Tool
  - a. Select **1. Expand Filesystem** – to use all the free space on the SD card
  - b. Select **2. Change User Password** – Change your password (recommended)
  - c. Select **5. Internationalisation Options** → **I2 Change time zone** – Change the timezone to suit your location.
5. Press **Finish** to save the configuration and reboot

### Step 3: Join Your LAN

1. The Raspberry Pi 3 Model B comes with an internal 802.11n Wireless adapter. To utilize WiFi on older Raspberry Pi models, you will need to acquire a wireless adapter. You can always also use a Cat5 cable to connect to the Pi to the LAN.
2. Upon restarting your Raspberry Pi, if the GUI doesn't load automatically, enter your username and password. Note, the default username is **pi** and the default password is **raspberr**y, and manually start the GUI by typing the terminal command **startx**

3. Once the GUI has loaded, click on network icon (top right) and select your network and enter the network password
4. Open the Terminal and type **sudo ifconfig** command to discover your IP address. You will find your Raspberry Pi's IP address in the wlan0 section. Red boxes in the image below show where you should look for your Pi's IP address.

```
pi@raspberrypi ~ $ ifconfig
eth0      Link encap:Ethernet  HWaddr b8:27:eb:96:19:a2
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:136 errors:0 dropped:0 overruns:0 frame:0
          TX packets:136 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:11472 (11.2 KiB)  TX bytes:11472 (11.2 KiB)

wlan0     Link encap:Ethernet  HWaddr e8:4e:06:2b:8e:78
          inet addr:192.168.0.166  Bcast:192.168.0.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:330 errors:0 dropped:111 overruns:0 frame:0
          TX packets:176 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:50587 (49.4 KiB)  TX bytes:22595 (22.0 KiB)

pi@raspberrypi ~ $ █
```

#### Step 4: Update the Pi

1. Now that your Raspberry Pi is working and connected to the network, you have the option of remotely accessing your Pi via SSH. The procedure varies according to your operating system and personal preference, to see the instructions for connecting with SSH, go to <https://www.raspberrypi.org/documentation/remote-access/ssh/>
2. Update the Raspberry Pi by typing each of the following commands into the Terminal (note, some of these updates will take a considerable amount of time depending upon your internet download speed):
  - a. **sudo apt-get update**
  - b. **sudo apt-get upgrade**
  - c. **sudo rpi-update**
3. After you have performed all the necessary updates, reboot your Pi with the terminal command **sudo reboot**

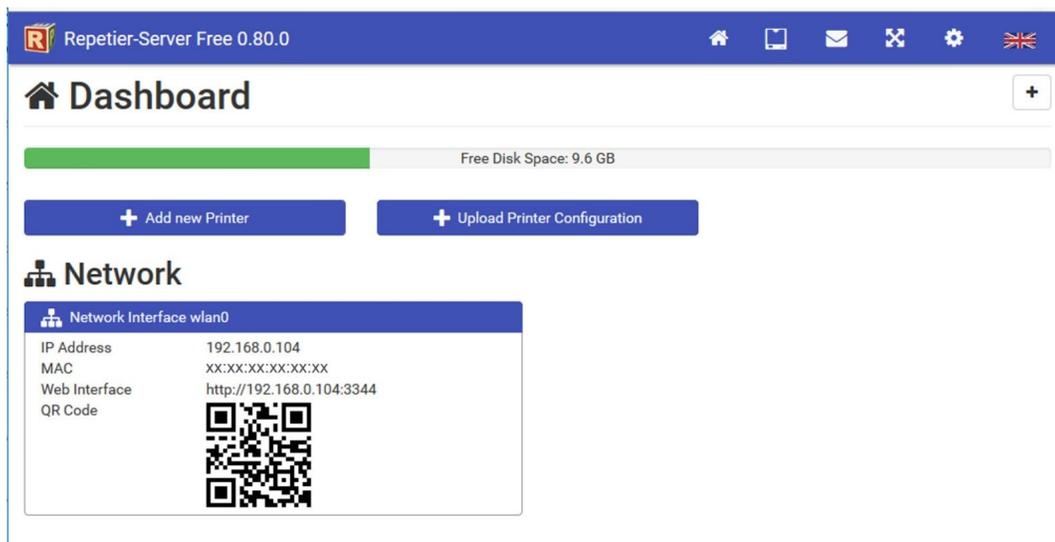
#### Step 5: Download and Install Repetier Server

1. Open the terminal
2. Download Repetier Server with the following command: **wget <http://download.repetier.com/files/server/debian-armel/Repetier-Server-0.80.0-Linux.deb>**

3. Install the .deb file with the command **sudo dpkg -i Repetier-Server-0.80.0-Linux.deb**

### Step 6: Access Repetier

1. Connect your Raspberry Pi via USB cable to your Stacker printer, and then power on both the Raspberry Pi and the printer.
2. With any web browser on the same network, enter the Raspberry Pi's IP address with port extension 3344. For example, if the Raspberry Pi's IP address was 192.168.0.104, you would type <http://192.168.0.104:3344> into the web browser on your computer or phone. If you are unable to connect, confirm the IP address of your Raspberry Pi with either a Terminal **ifconfig** command.
3. The first time you access your Stacker printer, you will see the Dashboard, and you will need to click **+ Add new Printer** and complete the configuration items.



4. When adding a printer, you will be directed through the following steps:

**Step 1: Naming.** Give your printer a name. If you anticipate using multiple 3D printers on your network, you will want to use unique descriptive names for your printers.

**Step 2: Connecting Printer.** You will need to change the baud rate to 250000. The other default settings should be correct

The screenshot shows the 'Printer Configuration Wizard' interface for Repetier-Server Free 0.80.0. The title is 'Step 2: Connecting Printer'. The 'Firmware' dropdown is set to 'Repetier-Firmware'. The 'Device / Port' field contains '/dev/serial/by-id/usb-FTDI\_FT231X\_USB\_UART\_DA00DF5Y-if00-port0'. The 'Baud Rate' dropdown is set to '250000 baud'. The 'Input Buffer Size' field is set to '127'. At the bottom, there are two buttons: 'Continue with Step 3' and 'Abort'.

**Step 3: Geometry.** The Geometry should match that of your printer, so only make changes if necessary.

**Step 4: Extruders and Bed.** Verify the number of extruders and change the filament diameter to 1.75mm.

The screenshot shows the 'Printer Configuration Wizard' interface for Repetier-Server Free 0.80.0. The title is 'Step 4: Extruders and Bed'. The 'Number of Extruders' field is set to '2'. The 'Filament Diameter' field is set to '1.75' with a unit of 'mm'. The 'Heated Bed Installed' checkbox is checked and labeled 'Yes'. At the bottom, there are two buttons: 'Continue with Step 5' and 'Abort'.

**Step 5: Features.** The features should match those of your printer, i.e.,  
Fan = Yes, SD Card = Yes, and Software Power = No

5. Click **Finish**
6. From the dashboard, select your printer and start using Repetier-Server.
7. For detailed documentation on using Repetier-Server, please visit <https://www.repetier-server.com/documentation/>