

# How to set up Minecraft server on Raspberry Pi

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Suppose your son is a fan of Minecraft and always wants you to play with it. This is not easy to do while your child plays on a tablet. In addition, your child is too young, so allowing it to play online games doesn't seem very suitable.

The solution is simple: Setting up Minecraft server on Raspberry Pi. The installation process is very simple!

## A detailed guide on how to set up Minecraft server on Raspberry Pi

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## What do you need to prepare?

For the Minecraft server build on Raspberry Pi, you will need:

1. A Raspberry Pi 3 (or newer) and power cable. Suppose your Pi is placed in a case.
2. Ethernet cable (more suitable for wireless networks).
3. Memory card with 8GB or larger capacity.

Although previous Pi models can be used for this, the results are not very good. These tutorials for Raspberry Pi 3 and 4 will give you the best Minecraft server possible.

All of these, when used with remote SSH connections, will allow you to set your Pi as a Minecraft server. If SSH is not an option, you will also need:

1. USB keyboard

2. USB mouse (or a combination of both)
3. 1 x HDMI cable
4. A compatible screen

Connect these peripherals before turning on your Raspberry Pi power.

Of course, you will also need a Minecraft copy on your computer. Note that the system parameters of Raspberry Pi mean you can't host too many people. For Pi 3, make sure not to try to host more than 10 people.

## Which version of Minecraft is right for you?



Some Minecraft versions are available. Creating this server will give you a world that you can access from any device running Minecraft, except MinecraftPi. Therefore, Minecraft versions on Windows PCs, game consoles, Android, iOS, Amazon Fire TV and tablet devices will work with this server.

Thus, if you have several devices on the local network, all can access Minecraft server.

In short, you will need the main game to open Minecraft from Mojang. Refer to:

<https://www.minecraft.net/en-us/>

## Instructions for setting up Minecraft server on Raspberry Pi

### Step 1: Raspbian installation and configuration Pi

Start with a new copy of Raspbian. You will find the latest version at:

<http://www.raspberrypi.org/downloads>

Follow the full instructions of **TipsMake.com** on how to install the operating system for Raspberry Pi. If this seems too complicated, try the NOOBS installer instead.

If you like to stick with an existing Raspbian copy, just upgrade to the latest version and update your packages:

```
sudo apt update sudo apt upgrade
```

Next, configure the Raspbian environment to run Minecraft server. If you have set it up with a screen and keyboard, simply open the **Raspberry Pi Configuration** tool in the **Preferences** menu on the screen.

If you access via SSH, use `sudo raspi-config` to open the text-based configuration tool.

Here, make the following changes:

1. Go to **Advanced Options> Memory Split** and change the setting to **16MB**. This will free up more memory resources for the server.
2. Next, go to **Boot Options> Desktop / CLI** and select **Console**. (No need to do this on Raspbian Lite).
3. If you're trying this with Raspberry Pi 1 or 2, look for **Overclock** on the main menu and set it to **High**. (Raspberry Pi 3 and 4 users can skip this step).
4. Activate SSH in **Advanced Options> SSH** .
5. Finally, go to **Advanced> Expand Filesystem** .

With the changes made, click **Finish** and restart Raspbian at the prompt. Once completed, log back in and find the device's IP address with:

```
sudo hostname -I
```

Or:

```
ifconfig
```

Write down the IP address before continuing.

## Step 2: Install Minecraft server

Install Minecraft on Raspberry Pi based on Nukkit server software. Developed exclusively for Minecraft: Pocket Edition, Nukkit can be easily installed on Pi via the command line.

Start by installing Java. This is required for Nukkit to run:

```
sudo apt install oracle-java8-jdk
```

Next create a new folder (labeled '**nukkit** ') then open it:

```
mkdir nukkit cd nukkit
```

Then download the Nukkit server software. Be sure to enter the following command correctly (it will be easier if copying and pasting into the SSH session).

```
wget -O nukkit.jar http://ci.mengcraft.com:8080/job/nukkit/lastSuccessfulBuild/a
```

You can find the most up-to-date builds on the project page:

```
https://ci.nukkitx.com/job/NukkitX/job/Nukkit/job/master/
```

After downloading, run Nukkit:

```
sudo java -jar nukkit.jar
```

This command prompts Nukkit to set up the server. When prompted, select the language you want (for example, using English) and then follow the created Minecraft server.

### Step 3: Configure Minecraft server

When you know the server is set up correctly, it's time to configure it. Two configuration files are included with Nukkit: **nukkit.yml** and **server.properties**.

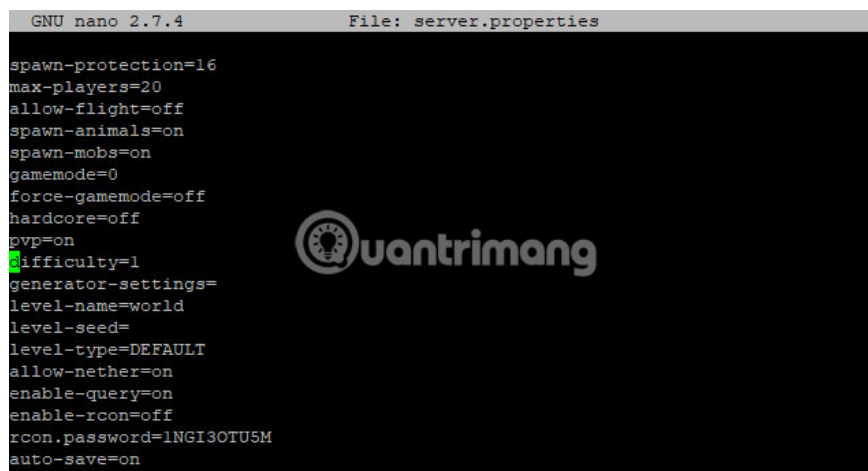
To edit them, simply open them in your favorite text editor. On Raspbian, **nano** is pre-installed, so use:

```
sudo nano nukkit.yml
```

Or

```
sudo nano server.properties
```

Many different changes are recommended. With whatever you change here, always remember that Pi is a modest device and can't handle too many things.

A screenshot of a terminal window showing the contents of the server.properties file. The window title is "GNU nano 2.7.4 File: server.properties". The text displayed is:

```
spawn-protection=16
max-players=20
allow-flight=off
spawn-animals=on
spawn-mobs=on
gamemode=0
force-gamemode=off
hardcore=off
pvp=on
difficulty=1
generator-settings=
level-name=world
level-seed=
level-type=DEFAULT
allow-nether=on
enable-query=on
enable-rcon=off
rcon.password=1NGI30TUSM
auto-save=on
```

A watermark for "uantrimang" is visible in the center of the terminal window.

A list of server properties can be found in the Minecraft wiki (reference link: <https://minecraft.gamepedia.com/Server.properties>), but some should be edited immediately. Starts with:

```
max-players=10
```

Older Raspberry Pi models will have to 'wrestle' with more than 10 players. You can be fine with about 5 - 6 players. Some other options are available for configuration that you might be interested in, such as:

```
pvp=on
```

This is for players, as well as players' actions. There is also a difficulty setting:

```
difficulty=1
```

Here, the easiest setting is **0** .

When you're done, press `Ctrl + X` to save and exit, then run:

```
sudo java -jar nukkit.jar
```

This command will restart the Minecraft server software.

## Step 4: Connect to Minecraft server on Raspberry Pi

Your Minecraft server will now be online on your local network. Check this with the ping command from another device, using the IP address you recorded earlier. If ping returns a response from the Raspberry Pi, you can continue.

All you need to do is launch Minecraft on your computer or tablet, then click **Play**> **Servers** . Here, click **Add Server**, enter new server details, name and add the IP address. The port number must match the number listed in the server attribute. If not, change it!



Your server will then be listed as an option to connect. Simply select the server to start playing.

## Step 5: Expand Minecraft server functions with Nukkit plugins

The default configuration for Nukkit server may not be entirely to your liking. Tweaking **nukkit.yml** and **server.properties** is an option, but may make you go too far.

Plugins developed for Nukkit allow you to improve basic gameplay. This additional features on the online session were ignored.

The proposed Nukkit plugins include:

1. MobPlugin: Add mobs and many animals to Minecraft environment.
2. WorldEssentials: Allow different game modes.
3. EssentialsNK: Includes additional game modes, multiplayer management tools and more.

They can be installed simply by downloading your Raspberry Pi and moving into the plugin directory.

For example, MobPlugin can be moved by:

```
sudo mv MobPlugin-1.9.0.1.jar plugins
```

Visit [nukkitx.com](http://nukkitx.com) website and click **Resources** to choose from over 250 plugins for Raspberry Pi Minecraft server.



That's all you need to do! Your own Minecraft game server will run on Raspberry Pi. If it works, you'll have a Minecraft world where you can connect and use it whenever you want. If your child is particularly fond of Minecraft, self-hosting Minecraft servers on the local network makes their online activities safe, at least when playing their favorite games.

If you want to do more with Raspberry Pi and games, check out the list of 11 classic Raspberry Pi games that run without the **TipsMake.com** emulator .

Hope you are succesful.

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